



MEMORANDUM CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

FROM: Sherilyn Lombos, City Manager

DATE: May 12, 2014

SUBJECT: Work Session for May 12, 2014

5:00 p.m. (40 min) – Update from Metro on the Climate Smart Communities Project. Metro staff members will provide an in-depth overview of this project, as well as the outcomes of recent meetings between the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Policy Advisory Committee (MPAC). Attached is a packet of information to assist with the conversation.

5:40 p.m. (20 min) – Southwest Corridor Draft Recommendation. The Council will discuss the recommendations from Metro on which alignments should be eliminated for additional study. Information will be added to this packet as soon as it is available prior to the meeting. The Council will also discuss planned public outreach.

6:00 p.m. (40 min) – Water Update. Staff will make a presentation and request Council discussion regarding a number of current water issues. Attached is a presentation that will be used.

6:40 p.m. (15 min) – Refunding of Outstanding Water Revenue Bonds. Staff will present information regarding a proposal to move forward with the advanced refunding of outstanding water revenue bonds.

6:55 p.m. (5 min) – Council Meeting Agenda Review, Communications & Roundtable. Council will review the agenda for the May 12th City Council meeting and brief the Council on issues of mutual interest.



MEMORANDUM

CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos

FROM: Ben Bryant, Economic Development Manager

DATE: 05/12/2014

SUBJECT: Metro's Climate Smart Communities Project

ISSUE BEFORE THE COUNCIL:

Receive an update on Metro's Climate Smart Communities Project.

EXECUTIVE SUMMARY:

At the last City Council Work Session, Metro Councilor Dirksen briefly highlighted the Climate Smart Communities Project which generated several questions. Metro staff members will provide a more in-depth overview of the project, as well as the outcomes of meetings between the Joint Policy Advisory Committee on Transportation (JPACT) and Metro Policy Advisory Committee (MPAC). To assist with the conversation, this staff report includes an outline of the project.

Background

In 2009, as part of a statewide transportation funding bill, the Oregon Legislature required the Portland metropolitan region develop an approach for reducing greenhouse gas (GHG) emissions from small trucks and cars. As required by the legislation, the plan must seek to reduce emissions 20% below 2005 levels by 2035. Further, the plan must be completed by 2014.

Metro undertook this mandate in 3 phases as described below (we are currently in phase 3).

- *Phase 1: Understand Choices* - This phase included research of best practices for reducing GHG and culminated in a toolbox of strategies the region could employ to reach the target reductions.
- *Phase 2: Shaping Choices* - This phase identified three alternative approaches which are detailed in Attachment B & C. Broadly speaking, the alternative approaches are categorized as following:
 - 1) Recent Trends
 - 2) Adopted Plans

3) New Plans and Policies

This phase also included an evaluation of how well these approaches would meet the required GHG emission reductions. The good news is that our Adopted Plans meet the targets; however, there are questions as to the funding levels needed to fully implement all of the adopted plans.

- *Phase 3: Shaping the Preferred Approach* - This is the current phase of the project and is aimed at a regional discussion to determine the mixing and matching of the three approaches from above which will formulate the preferred alternative.

Regional Decisions

At the regional level, the discussion has been centered around the following strategies:

- How much transit should we provide?
- How much should we use technology to manage the system?
- How much should we expand the reach of travel information?
- How much of the planned active transportation network should we complete?
- How much of the planned street and highway network should we complete?
- How should local communities manage parking?

Absent from this list are the impacts of local land use plans and vehicle fuel efficiency, due to specific reasons outlined below:

- *Local Land Use Plans*: At the onset of this project, there were concerns about what the impact this project would have on local land use plans. Fortunately, the analysis of the regions local plans determined that they had many elements that would reduce GHG emissions (i.e. investing in town centers, improving mixed-use areas, supporting transit, etc.). According, the members of JPACT and MPAC recommended that local plans remain the same.
- *Vehicle Technology and Fuel Efficiency*: The legislation requiring this planning effort was specific about which assumptions could be used regarding the adoption of more fuel efficient vehicles. Those assumptions are more clearly outlined in Attachment C.

Next Steps

January to May 2014 Community and business leaders, local governments and the public are asked to weigh in on which investments and actions should be included in the region's preferred approach.

April to May 2014 Regional policy advisory committees are asked to shape a draft preferred approach and make recommendations to the Metro Council.

June 2014 The Metro Council considers the policy committees' recommendations and is asked to provide direction to staff on the draft preferred approach.

Summer 2014 Staff evaluates the draft preferred approach.

September 2014 Final public review of preferred approach.

December 2014 Metro Council considers adoption of the recommended preferred approach.

January 2015 Submit adopted approach to Land Conservation and Development Commission for approval.

Attachments: Attachment A: Presentation
 Attachment B: Climate Smart Brochure
 Attachment C: Scenario Assumptions
 Attachment D: Policymaker Decision Guide

www.oregonmetro.gov/climatescenarios

**CLIMATE
SMART**
COMMUNITIES
SCENARIOS PROJECT



Climate Smart Communities Scenarios Project

Shaping the preferred approach

John Williams, Deputy Planning Director
Tualatin City Council Work Session
May 12, 2014



State mandate to reduce GHG emissions



2009 – HB 2001 (Jobs and Transportation Act)

2011 – LCDC adopts targets

2012 – LCDC to adopt deadline for preferred scenario selection

Building toward six desired outcomes



**Vibrant
communities**



Equity



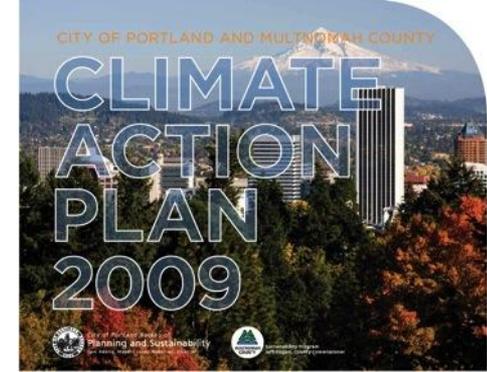
**Economic
prosperity**



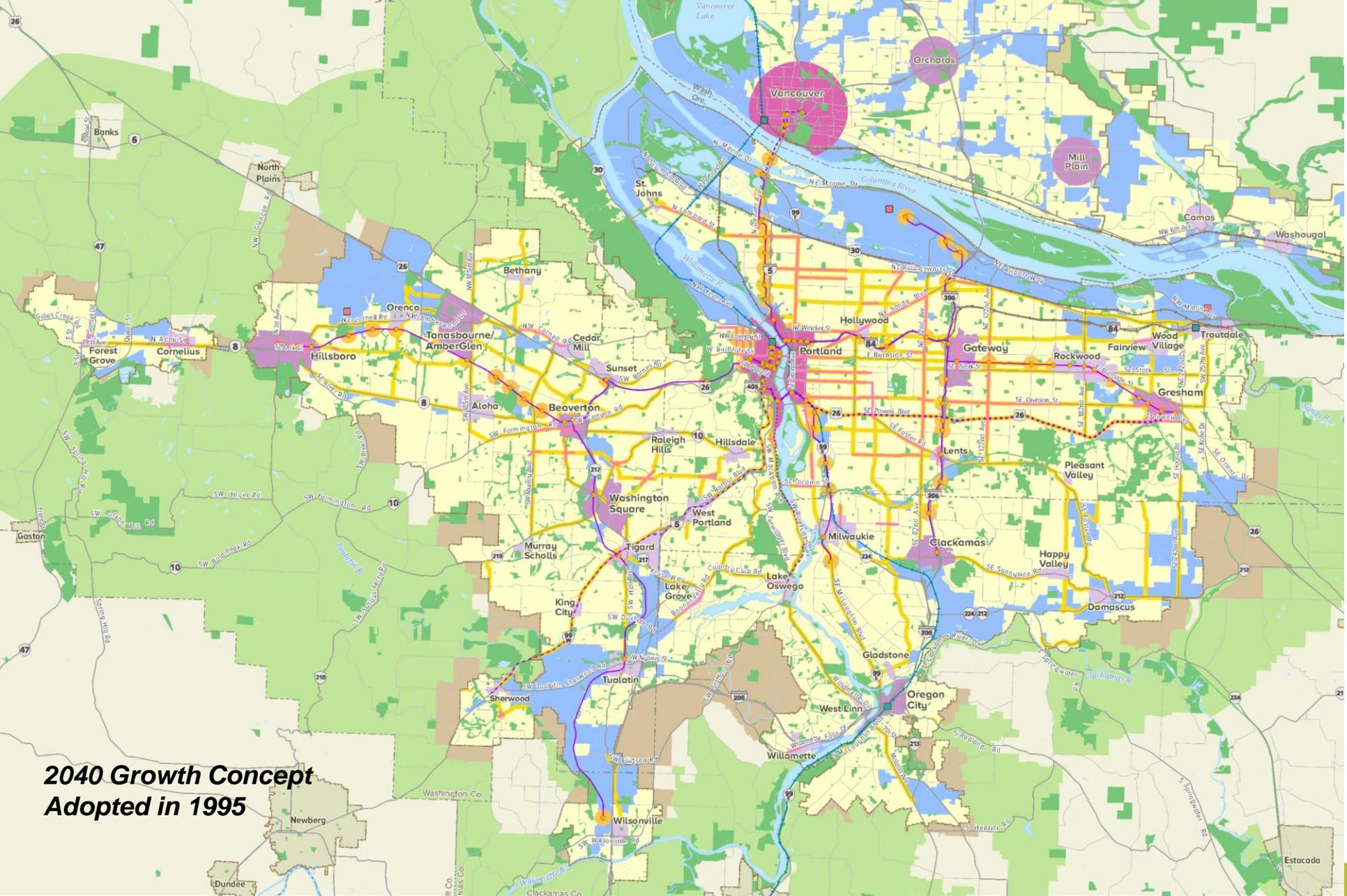
**Transportation
choices**



Clean air & water



**Climate
leadership**



**2040 Growth Concept
Adopted in 1995**

OVERVIEW OF PROCESS, RESULTS AND POLICY QUESTIONS

Where we've been & where we are headed

PHASES 1 & 2

Understand Choices
2011-2012

Shape Choices
Jan.-Oct. 2013

PHASE 3

Shape Preferred
Nov. 2013-June 2014

Adopt Preferred
Sept.-Dec. 2014



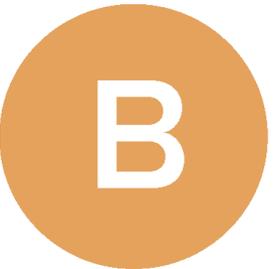
WE ARE HERE

What the future might look like in 2035



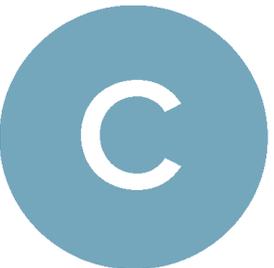
RECENT TRENDS

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.



ADOPTED PLANS

This scenario shows the results of successfully implementing adopted land use and transportation plans and achieving the current RTP, which relies on increased revenue.



NEW PLANS & POLICIES

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

Scenarios approved for testing by Metro advisory committees and the Metro Council in May and June 2013

Elements of each scenario...

March 30, 2014

Phase 2: 2010 base year and alternative scenario inputs

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

		2010	2035		
		Base Year Reflects existing conditions	Scenario A Recent trends	Scenario B Adopted plans	Scenario C New plans and policies
Strategy					
Community design	Households in mixed use areas (percent)	26%	36%	37%	37%
	Urban growth boundary expansion (acres)	2010 UGB	28,000 acres	12,000 acres	12,000 acres
	Drive alone trips under 10 miles that shift to bike (percent)	9%	10%	15%	20%
	Transit service (daily revenue hours)	4,900	5,600	6,200 <small>(RTP Financially Constrained)</small>	11,200 <small>(RTP State + more transit)</small>
	Work/non-work trips in areas with parking management (percent)	13% / 8%	13% / 8%	30% / 30%	50% / 50%
Pricing	Pay-as-you-drive insurance (percent of households participating)	0%	20%	40%	100%
	Gas tax (cost per gallon 2005\$)	\$0.42	\$0.48	\$0.73	\$0.18
	Road user fee (cost per mile)	\$0	\$0	\$0	\$0.03
	Carbon emissions fee (cost per ton)	\$0	\$0	\$0	\$50

See pages 58-59 of the discussion guide

...Elements of each scenario

March 30, 2014

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

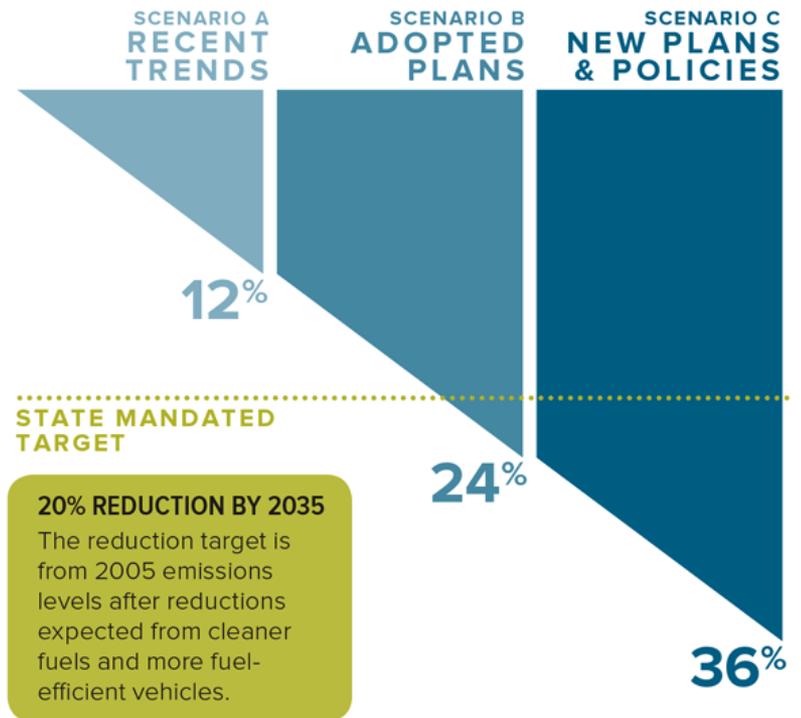
Strategy		2010	2035		
		Base Year Reflects existing conditions	Scenario A Recent trends	Scenario B Adopted plans	Scenario C New plans and policies
Marketing and Incentives	Households participating in eco-driving (percent)	0%	0%	30%	60%
	Households participating in individualized marketing programs (percent)	9%	30%	30%	60%
	Workers participating in employer-based commuter programs (percent)	20%	20%	20%	40%
	Carsharing in high density areas (participation rate)	One carshare per 5000 vehicles	Twice the number of carshare vehicles available	Same as Scenario A	Four times the number of carshare vehicles available
	Carsharing in medium density areas (participation rate)	One carshare per 5000 vehicles	Same as today	Twice the number of carshare vehicles	Same as Scenario B
Roads	Freeway and arterial expansion (lane miles added)	N/A	9 miles	81 miles (RTP Financially Constrained)	105 miles (RTP State)
	Delay reduced by traffic management strategies (percent)	10%	10%	20%	35%
Fleet	Fleet mix (percent)	auto: 57% light truck: 43%	auto: 71% light truck: 29%		
	Fleet turnover rate	10 years	8 years		
Technology	Fuel economy (miles per gallon)	auto: 29.2 mpg light truck: 20.9 mpg	auto: 68.5 mpg light truck: 47.7 mpg		
	Carbon intensity of fuels	90 g CO ₂ e/megajoule		72 g CO ₂ e/megajoule	
	Plug-in hybrid electric/all electric vehicles (percent)	auto: 0% / 1% light truck: 0% / 1%	auto: 8% / 26% light truck: 2% / 26%		

See pages 58-59 of the discussion guide

We found good news

- Adopted plans meet the target - *if we can make the investments needed*
- Significant community, economic and environmental benefits can be realized
- We will fall short if we continue investing at current levels

REDUCED GREENHOUSE GAS EMISSIONS PERCENT BELOW 2005 LEVELS



See pages 53-57 of the discussion guide

Benefits grow with more investment

- Investment helps address congestion
- Less air pollution, more physical activity and improved safety save lives
- Reduced emissions benefit the environment
- Businesses and our economy benefit from reduced delay
- Lower vehicle travel costs help household budgets



See pages 53-57 of the discussion guide

Policy choices made in February

- ☑ **LAND USE** - Carry forward and implement adopted regional and local plans
- ☑ **FLEET AND VEHICLE TECHNOLOGY** - Use state assumptions for transition to cleaner fuels and fuel-efficient vehicles and insurance paid by the miles driven

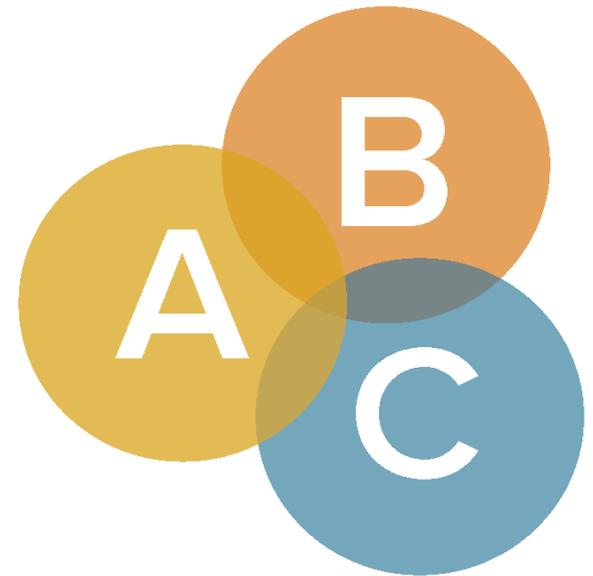
See page 18 of the discussion guide



Policy choices to make on May 30...

To realize our shared vision for healthy and equitable communities and a strong economy while reducing greenhouse gas emissions...

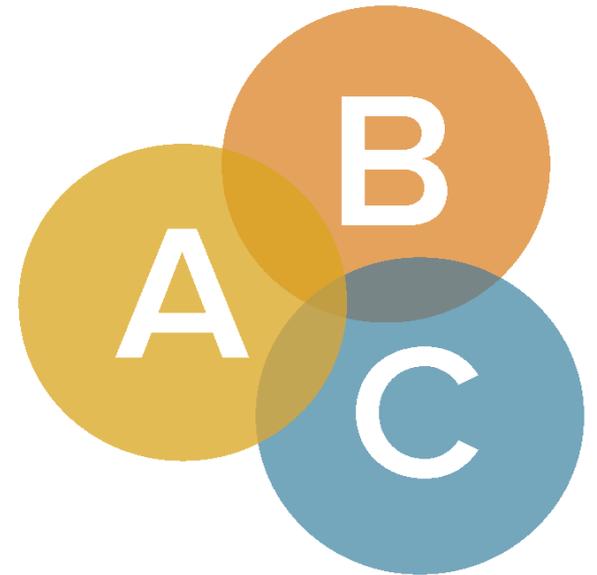
- ❑ How much **transit** should we provide by 2035?
- ❑ How much should we use **technology** to manage the system by 2035?
- ❑ How much should we expand the reach of **travel information** by 2035?



See page 19 of the discussion guide

...Policy choices to make on May 30

- How much of the planned **active transportation** network should we complete by 2035?
- How much of the planned **street and highway** network should we complete by 2035?
- How should local communities manage **parking** by 2035?



See page 19 of the discussion guide

Understanding the ratings

RELATIVE CLIMATE BENEFITS



Transit

Parking

Active transportation

Information and incentives

Technology and “smart” transportation

Streets and highways

RELATIVE COST

Up to \$\$\$

\$\$\$

\$\$\$

\$\$\$

\$\$\$

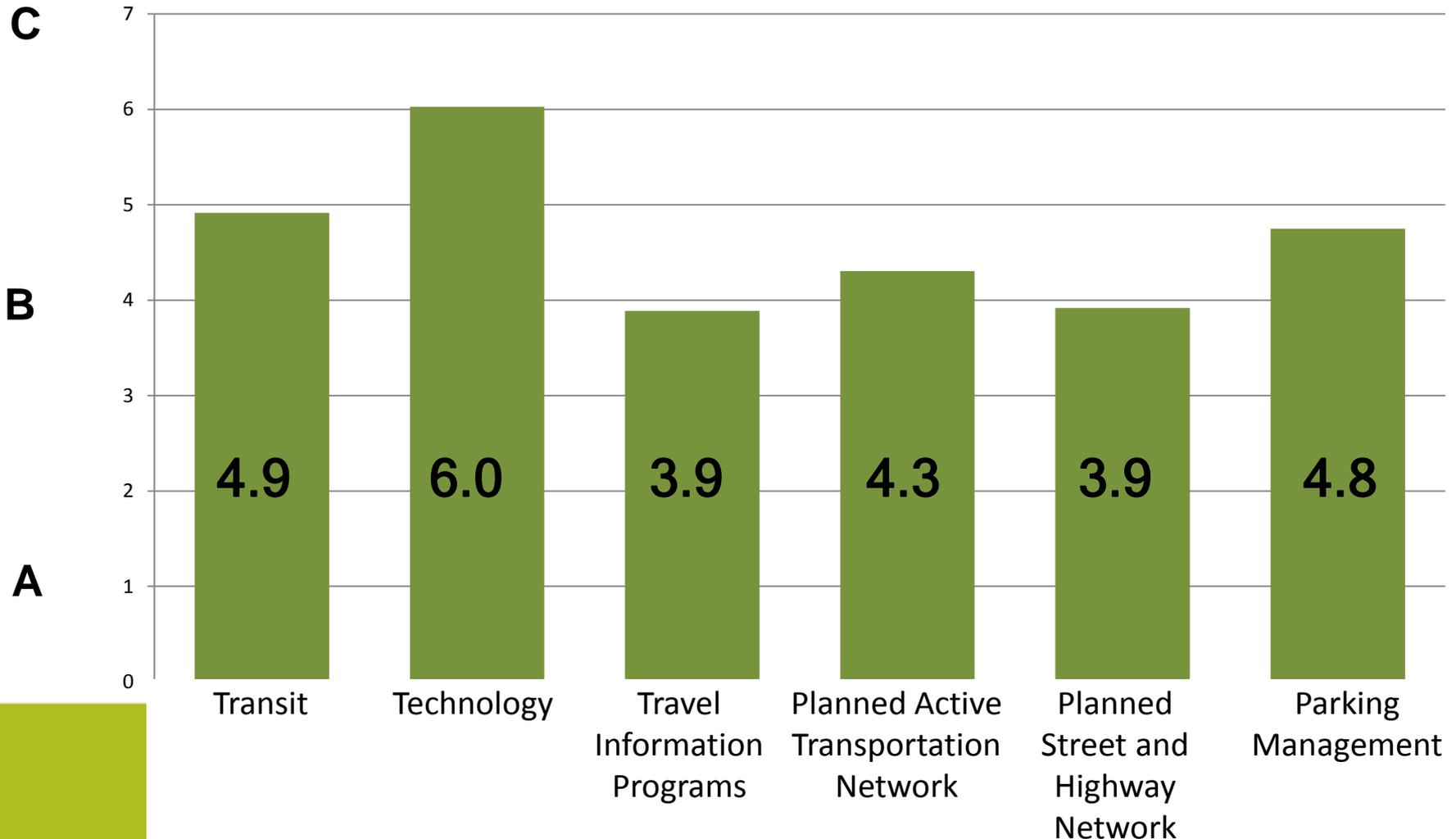
Up to \$\$\$

See pages 21 and 22 of the discussion guide

April 11 JPACT/MPAC Straw poll results

Preferences for Scenarios A, B, C and in-Between Scenarios

Averages of all respondents (mean):



What this means for communities

- **We can meet the target by building local plans and visions**

Regional agreement to carry forward and implement adopted regional and local plans

- **Local control and flexibility will be provided**

Opportunity to advocate for local needs and priorities across the six policy areas

- **We're stronger together**

Local, regional, state and federal partnerships are needed to invest in communities and realize our adopted plans





Immediate next steps

WEEK OF APRIL 14

Report results of meeting

MAY 1-5

Members report to county coordinating committees

MAY

TPAC and MTAC shape proposal for consideration on May 30

MAY 30

JPACT and MPAC rec'd on draft preferred approach and begin funding discussion

JUNE 19

Council direction on draft preferred approach

Final steps in 2014

JUNE – AUGUST

Staff evaluates draft preferred & develops implementation rec'ds

SEPTEMBER

Report back results to regional advisory committees

SEPT. 18 – NOV. 3

Public and local government review of results and draft preferred approach

NOV. – DEC.

Final refinements and adoption

CLIMATE SMART COMMUNITIES SCENARIOS PROJECT



What the future might look like in 2035

Scenario

A

Recent Trends

This scenario shows the results of implementing adopted plans to the extent possible with existing revenue.

Scenario

B

Adopted Plans

This scenario shows the results of successfully implementing adopted land use and transportation plans and achieving the current RTP, which relies on increased revenue.

Scenario

C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

INVESTING IN GREAT COMMUNITIES

The Climate Smart Communities Scenarios Project was initiated in response to a mandate from the 2009 Oregon Legislature to reduce per capita greenhouse gas emissions by 20 percent from cars and small trucks by 2035.

There are many ways to reduce emissions while creating healthy, more equitable communities and a vibrant regional economy. Providing services and shopping near where people live, expanding transit service, encouraging electric cars and providing safer routes for walking and biking all can help.

The goal of the Climate Smart Communities Scenarios Project is to engage community, business, public health and elected leaders in a discussion with their communities to shape a preferred approach that meets the state mandate and supports local and regional plans for downtowns, main streets and employment areas.

To realize that goal, Metro evaluated three approaches – or scenarios – over the summer of 2013 to better understand how best to support community visions and reduce greenhouse gas emissions. The results will be used to frame the regional discussion about which investments and actions should be included in a preferred approach for the Metro Council to consider for adoption in December 2014.

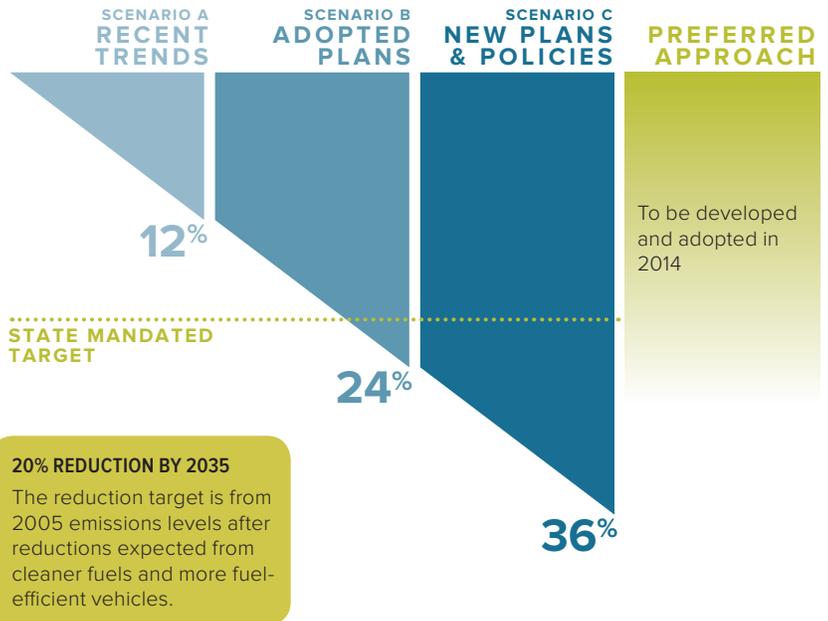
WHAT HAVE WE LEARNED SO FAR?

Adopted plans can meet the target

Our analysis indicates that adopted local and regional plans can meet our target for reducing greenhouse gas emissions – if we make the investments and take the actions needed to implement those plans.

This is good news, but there is more work to be done.

Attachment B REDUCED GREENHOUSE GAS EMISSIONS PERCENT BELOW 2005 LEVELS



20% REDUCTION BY 2035
The reduction target is from 2005 emissions levels after reductions expected from cleaner fuels and more fuel-efficient vehicles.

INVESTMENTS AND ACTIONS THAT CREATE GREAT COMMUNITIES	RELATIVE CLIMATE BENEFIT
WHERE WE LIVE AND WORK	
Implement 2040 Growth Concept	★★★★★
Implement local zoning, comprehensive plans and transportation plans	★★★★★
Provide new schools, services, and shopping close to neighborhoods	★★★★★
Manage the urban growth boundary	★★★☆☆
HOW WE GET AROUND	
Maintain and make transit more convenient, frequent, accessible and affordable	★★★★★
Manage parking with a market-responsive approach	★★★★☆
Use technology and “smarter” roads to manage traffic flow and boost efficiency	★★★★☆
Provide information to expand use of low carbon travel options and fuel-efficient driving techniques	★★★★☆
Make walking and biking more safe and convenient with complete streets and trails	★★★☆☆
Maintain and make streets and highways more safe, reliable and connected	★★★☆☆
Expand access to car-sharing	★★★☆☆
OUR HEALTH AND ENVIRONMENT	
Transition to low emission vehicles and engines, including electric vehicles	★★★★★
Transition to cleaner and low carbon fuels	★★★★★
Achieve federal fuel economy standards	★★★★☆

WHAT INVESTMENTS AND ACTIONS BEST SUPPORT YOUR COMMUNITY VISION?

Each community is unique

Most of the investments and actions under consideration are already being implemented to varying degrees across the region to realize community visions and other important economic, social and environmental goals.

A one-size-fits-all preferred approach won't meet the needs of our diverse communities. A combination of investments and actions will help us realize our shared vision for making this region a great place for generations to come.



WHAT DOES THIS MEAN FOR YOUR COMMUNITY?

We're all in this together

Local, regional, state and federal partnerships are needed to make the investments and take the actions necessary to create great communities while reducing greenhouse gas emissions.

Working together, we can develop a shared strategy that may include a transportation legislative package for 2015.

RELATIVE COST	WHO HAS A ROLE?			
	FEDERAL	STATE	REGIONAL	LOCAL
\$\$\$			●	●
\$\$\$				●
\$\$\$				●
\$\$\$			●	
Up to \$\$\$	●	●	●	●
\$\$\$				●
\$\$\$	●	●	●	●
\$\$\$	●	●	●	●
\$\$\$	●	●	●	●
Up to \$\$\$	●	●	●	●
\$\$\$				●
\$\$\$	●	●	●	●
\$\$\$	●	●		
\$\$\$	●	●		



About Metro

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy, and sustainable transportation and living choices for people and businesses in the region. Voters have asked Metro to help with the challenges and opportunities that affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to providing services, operating venues and making decisions about how the region grows. Metro works with communities to support a resilient economy, keep nature close by and respond to a changing climate. Together, we're making a great place, now and for generations to come.

Stay in touch with news, stories and things to do.

www.oregonmetro.gov/connect

Metro Council President

Tom Hughes

Metro Council

Shirley Craddick, District 1
Carlotta Collette, District 2
Craig Dirksen, District 3
Kathryn Harrington, District 4
Sam Chase, District 5
Bob Stacey, District 6

Auditor

Suzanne Flynn

WHAT'S NEXT?

January to May 2014 Community and business leaders, local governments and the public are asked to weigh in on which investments and actions should be included in the region's preferred approach

June 2014 The Metro Council is asked to provide direction to staff on the draft preferred approach

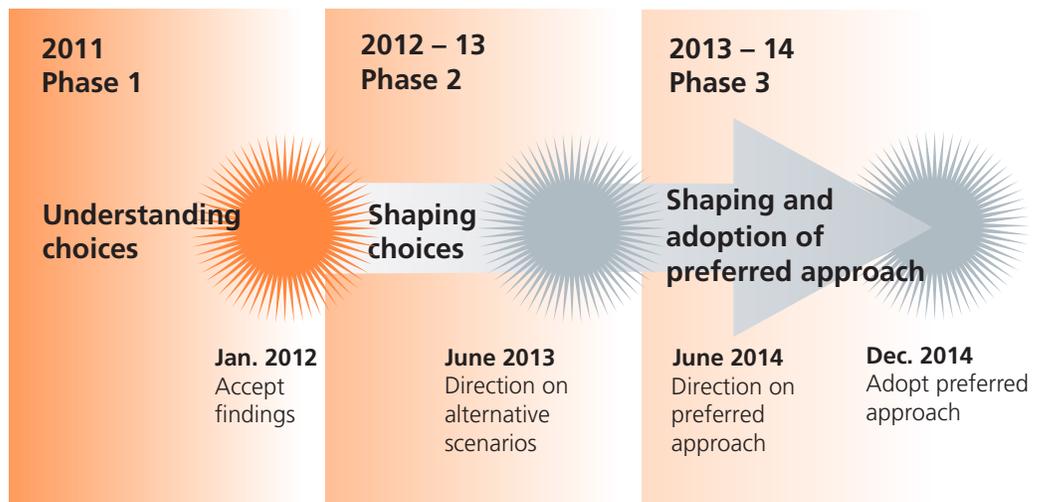
Summer 2014 Evaluation of preferred approach

September 2014 Final public review of preferred approach

December 2014 Metro Council considers adoption of preferred approach

January 2015 Submit adopted approach to Land Conservation and Development Commission for approval

Climate Smart Communities Scenarios Project timeline



WHERE CAN I FIND MORE INFORMATION?

www.oregonmetro.gov/climatescenarios

Visit the project website to learn more about existing community efforts and their challenges, and to download other publications and reports.

For email updates, send a message to climatescenarios@oregonmetro.gov

MAKING A GREAT PLACE



JAN. 29, 2014

Phase 2: 2010 base year and alternative scenario inputs

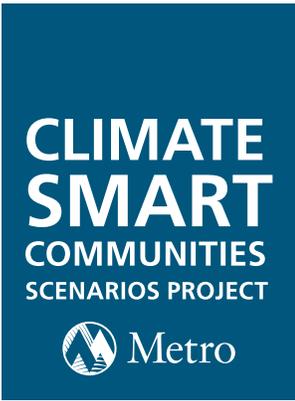
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		2010	2035		
		Base Year Reflects existing conditions	Scenario A Recent trends	Scenario B Adopted plans	Scenario C New plans and policies
Strategy					
Community design	Households in mixed use areas (percent)	26%	36%	37%	37%
	Urban growth boundary expansion (acres)	2010 UGB	28,000 acres	12,000 acres	12,000 acres
	SOV trips under 10 miles that shift to bike (percent)	9%	10%	15%	20%
	Transit service (daily revenue miles)	73,000 miles	80,000 miles	91,000 miles (RTP Financially Constrained)	159,000 miles (RTP State + more transit)
	Work/non-work trips in areas with parking management (percent)	13% / 8%	13% / 8%	30% / 30%	50% / 50%
Pricing	Pay-as-you-drive insurance (percent of households participating)	0%	20%	40%	100%
	Gas tax (cost per gallon 2005\$)	\$0.42	\$0.48	\$0.73	\$0.18
	Road user fee (cost per mile 2005\$)	\$0	\$0	\$0	\$0.03
	Carbon emissions fee (cost per ton)	\$0	\$0	\$0	\$50.00

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

Strategy

		2010	2035		
		Base Year Reflects existing conditions	Scenario A Recent trends	Scenario B Adopted plans	Scenario C New plans and policies
Marketing and incentives	Households participating in eco-driving (percent)	0%	0%	30%	60%
	Households participating in individualized marketing programs (percent)	9%	30%	30%	60%
	Workers participating in employer-based commuter programs (percent)	20%	20%	20%	40%
	Car-sharing in high density areas (target participation rate)	One car share per 5000 vehicles	Twice the number of car share vehicles available	Same as Scenario A	Four times the number of car share vehicles available
	Car-sharing in medium density areas (target participation rate)	One car share per 5000 vehicles	Same as today	Twice the number of car share vehicles available	Same as Scenario B
Roads	Freeway and arterial expansion (lane miles added from 2010)	N/A	9 miles	81 miles (RTP Financially Constrained)	105 miles (RTP State)
	Delay reduced by traffic management strategies (percent)	10%	10%	20%	35%
Fleet	Fleet mix (percent)	auto: 57% light truck: 43%	auto: 71% light truck: 29%		
	Fleet turnover rate (age)	10 years	8 years		
Technology	Fuel economy (miles per gallon)	auto: 29.2 mpg light truck: 20.9 mpg	auto: 68.5 mpg light truck: 47.7 mpg		
	Carbon intensity of fuels	90 g CO ₂ e/megajoule	72 g CO ₂ e/megajoule		
	Plug-in hybrid electric/all electric vehicles (percent)	auto: 0%/1% light truck: 0%/1%	auto: 8%/26% light truck: 2%/26%		

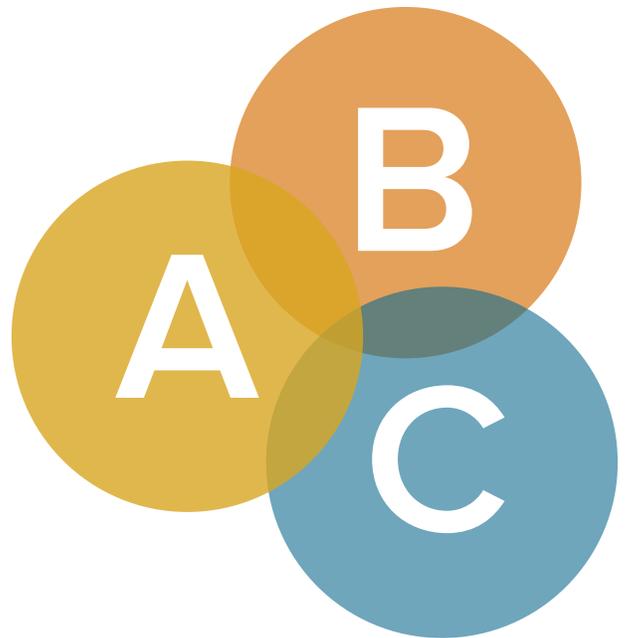


SHAPING THE PREFERRED APPROACH

.....
A DISCUSSION GUIDE FOR POLICYMAKERS
.....

PORTLAND METROPOLITAN REGION

APRIL 2014



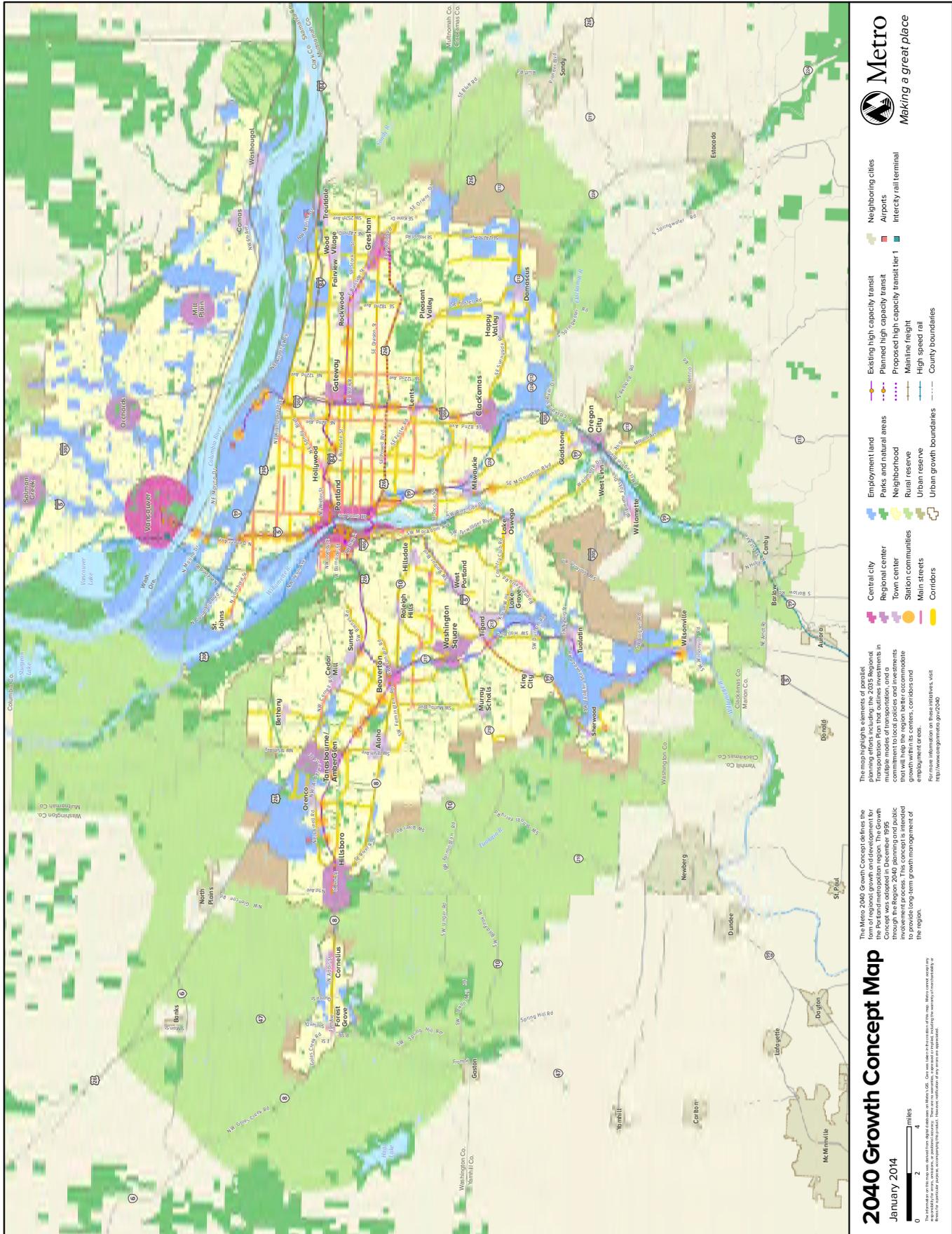
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OUR SHARED VISION: THE 2040 GROWTH CONCEPT

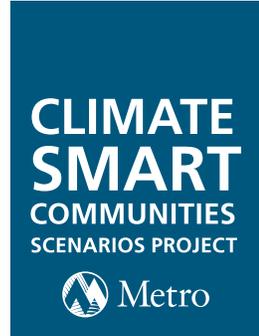
An integrated land use and transportation vision for building healthy, equitable communities and a strong economy while reducing greenhouse gas emissions.



INTRODUCTION

The Climate Smart Communities Scenarios Project was initiated in response to a state mandate to reduce per capita greenhouse gas emissions from cars and small trucks by 2035.

The goal of the project is to engage community, business, public health and elected leaders in a discussion to shape a preferred approach that supports local plans for downtowns, main streets and employment areas; protects farms, forestland, and natural areas; creates healthy, livable neighborhoods; increases travel options; and grows the regional economy while reducing greenhouse gas emissions from cars and small trucks.



ABOUT THIS GUIDE

This discussion guide for policymakers is designed to help elected, business, and community leaders and residents better understand the challenges and choices facing the Portland metropolitan region. It will be used by members of the Metro Policy Advisory Committee (MPAC) and Joint Policy Advisory Committee on Transportation (JPACT) to help shape a preferred approach for the Metro Council to consider for adoption in December 2014.

This guide brings together the results of the analysis completed in late 2013 and background information on the choices facing policymakers as the Climate Smart Communities Scenarios Project moves forward to shape a preferred approach that supports the region's shared values and helps make local and regional plans a reality.

The desired outcome for this discussion guide is that together, cities, counties and regional partners will be prepared to decide which investments and actions from each scenario should be included in the preferred approach.

What the future might look like in 2035

SCENARIO



Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

SCENARIO



Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

SCENARIO



New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

The scenarios are tested for research purposes only and do not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

DESIRED REGIONAL OUTCOMES

ATTRIBUTES OF GREAT COMMUNITIES

The six desired outcomes for the region endorsed by the Metro Policy Advisory Committee and approved by the Metro Council:

Vibrant communities

People live and work in vibrant communities where their everyday needs are easily accessible.

Economic prosperity

Current and future residents benefit from the region's sustained economic competitiveness and prosperity.

Safe and reliable transportation

People have safe and reliable transportation choices that enhance their quality of life.

Leadership on climate change

The region is a leader in minimizing contributions to global warming.

Clean air and water

Current and future generations enjoy clean air, clean water, and healthy ecosystems.

Equity

The benefits and burdens of growth and change are distributed equitably.

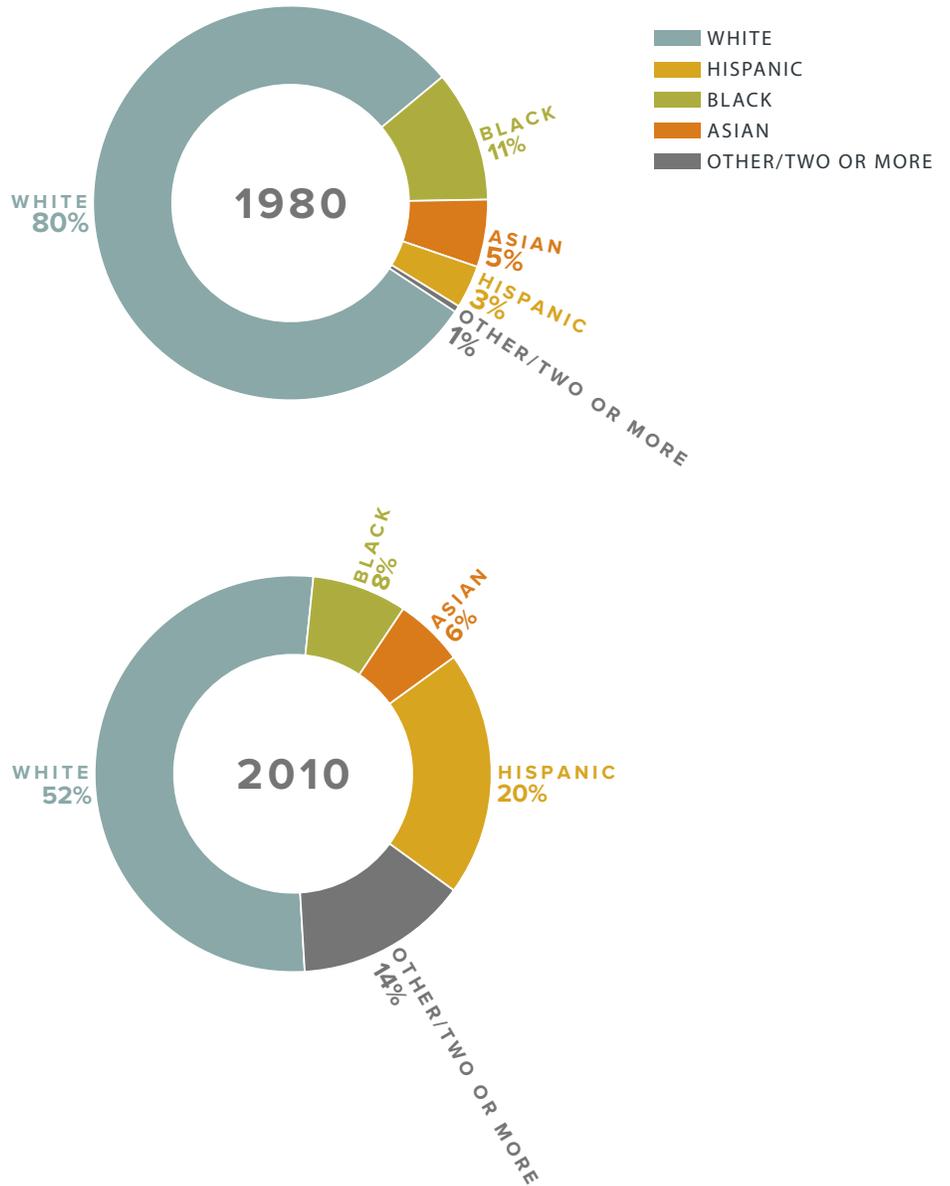




People of color are an increasingly significant percentage of the Portland metropolitan region's population. Areas with high poverty rates and people of color are located in all three of the region's counties – often in neighborhoods with limited transit access to family wage jobs and gaps in walking and bicycling networks.

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RACE AND ETHNICITY IN THE PORTLAND METROPOLITAN REGION



REGIONAL CONTEXT

OUR REGION IS CHANGING

The Portland metropolitan region is an extraordinary place to call home. Our region has unique communities with inviting neighborhoods, a diverse economy and a world-class transit system. The region is surrounded by stunning natural landscapes and criss-crossed with a network of parks, trails and wild places within a walk, bike ride or transit stop from home. Over the years, the communities of the Portland metropolitan region have taken a collaborative approach to planning that has helped make our region one of the most livable in the country.

Because of our dedication to planning and working together to make local and regional plans a reality, we have set a wise course for managing growth – but times are challenging. With a growing and increasingly diverse population and an economy that is still in recovery, residents of the region along with the rest of the nation have reset expectations for financial and job security.

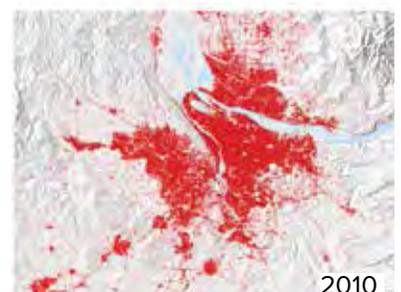
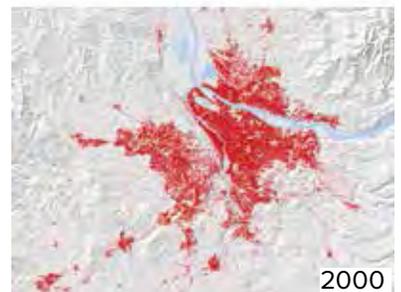
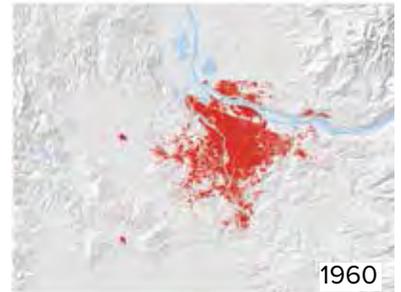
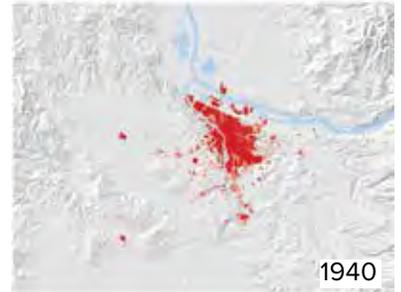
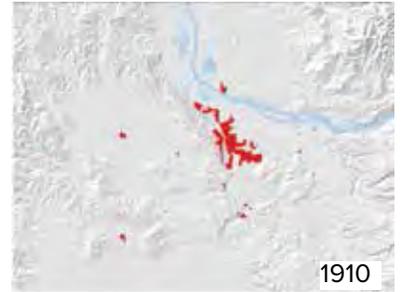
Aging infrastructure, rising energy costs, a changing climate, and global economic and political tensions demand new kinds of leadership, innovation and thoughtful deliberation and action to ensure our region remains a great place to live, work and play for everyone.

In collaboration with city, county, state, business and community leaders, Metro has researched how land use and transportation policies and investments can be leveraged to respond to these challenges.

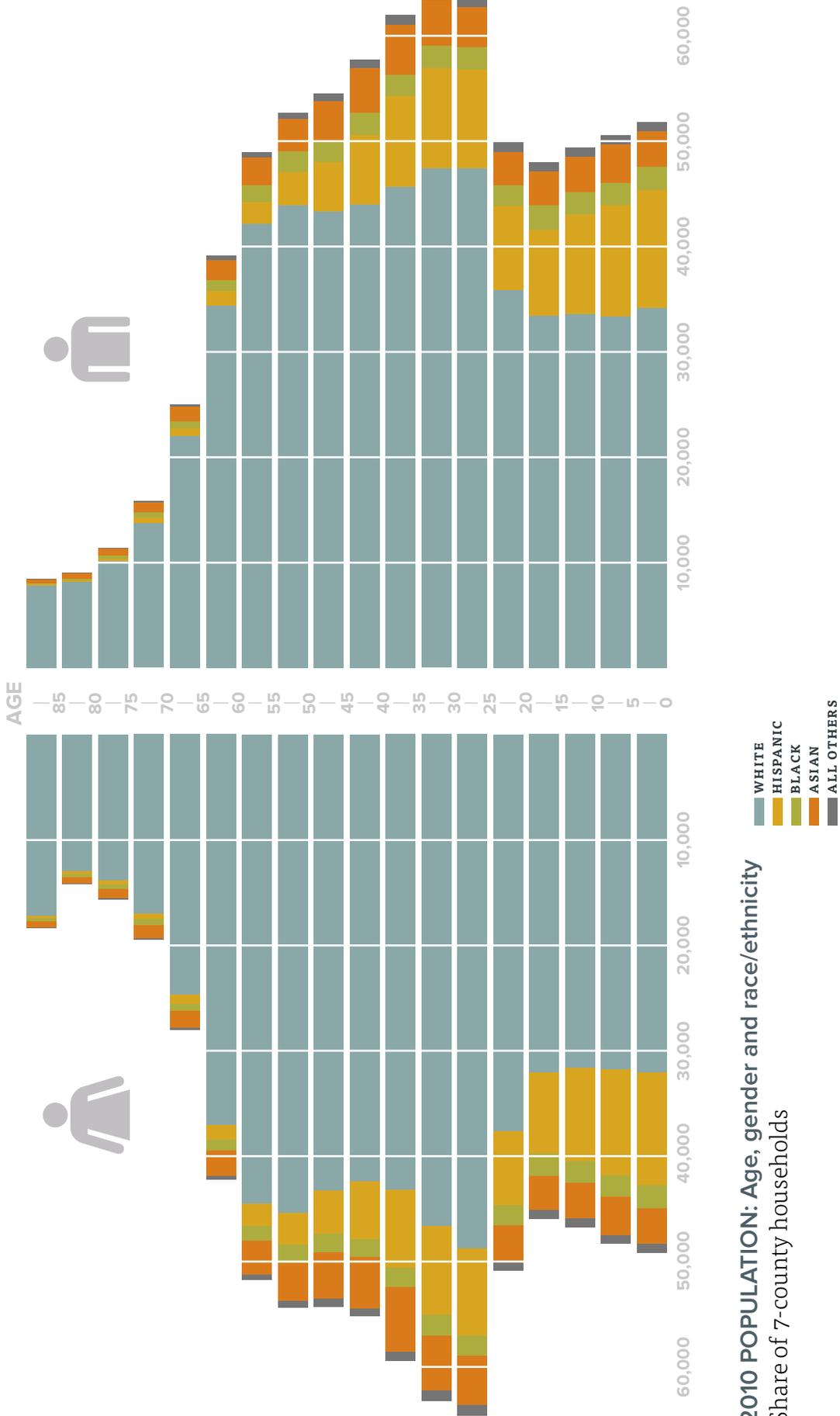
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The region expects to welcome nearly 500,000 new residents and more than 365,000 new jobs within the urban growth boundary by 2035.

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Source: 1910, 1940, 1960: Metro Metropolitan Planning Commission; 2000, 2010: NOAA/COP Landcover



INVESTING IN OUR COMMUNITIES

Oregon has been a leader among a handful of states in addressing climate change, with an ambitious goal to reduce greenhouse gas (GHG) emissions from all sources to 75 percent below 1990 levels by the year 2050. In 2009, the Oregon Legislature required the Portland metropolitan region to develop an approach to reduce per capita greenhouse gas emissions from cars and small trucks by 2035.

Because our community visions focus development and investment where it makes sense – in downtowns, main streets and employment areas – and support transportation options for getting to work, school, and destinations across the region, we already drive 20 percent fewer miles every day than residents of other regions of similar size.

While our existing local and regional plans for growth can get us to the 2035 target, we still have work to do to make those plans a reality.

We know that investing in quality infrastructure is essential to a functioning, vibrant economy and healthy, livable communities. Investment in infrastructure is also needed to reduce greenhouse gas emissions. Past experience and analysis indicate that investments in centers, corridors and employment areas are an effective means of attracting growth to these areas, supporting community visions and values, and reducing greenhouse gas emissions.

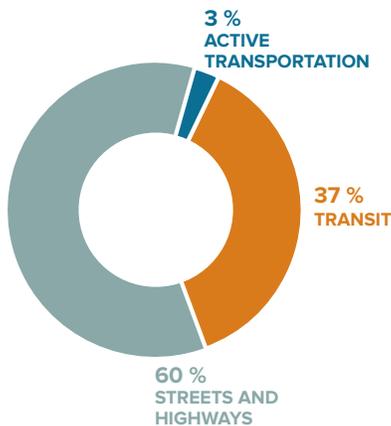
Investments can take the form of expanding transit service; building new sidewalks, bikeways or street connections; using technology to actively manage the transportation system; managing parking; providing travel option programs; expanding existing roads; and other tools. Removing barriers to more efficient use of land and existing infrastructure can also help communities achieve their vision for the future while reducing greenhouse gas emissions as called for by the state.



The Oregon Legislature has required the Portland region to reduce per capita greenhouse gas emissions from cars and small trucks by 2035.

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SHARE OF FEDERAL AND STATE CAPITAL INVESTMENTS IN THE PORTLAND METROPOLITAN REGION BY MODE (1995 – 2010)



AVERAGE ANNUAL AMOUNT OF STATE AND FEDERAL FUNDING SPENT ON CAPITAL INVESTMENTS IN THE PORTLAND METROPOLITAN REGION (1995 – 2010)

\$10 million per year
active transportation

\$141 million per year
transit

\$225 million per year
streets and highway

Source: Metro 2010

PAYING FOR NEEDED INVESTMENTS

Our nation is investing less in infrastructure today than at any time in our history. The Portland metropolitan region is falling behind on making the investments needed to support our growing population and achieve community visions. Research in 2008 estimated the cost of building needed public and private infrastructure to be \$27 to \$41 billion by 2035. Traditional funding sources are expected to cover only half that amount.

Funding for transportation investments comes from many sources, including the U.S. Congress, the Federal Highway Administration, the Federal Transit Administration, the Oregon Legislature, ODOT, Metro, cities, counties, TriMet, South Metro Region Rapid Transit (SMART), the Port of Portland and developers.

Transportation funding has long been primarily a state and federal obligation, financed largely through gas taxes and other user fees. The purchasing power of federal and state gas tax revenues is declining as individuals drive less and fuel efficiency increases. The effectiveness of this revenue source is further eroded because the gas tax is not indexed to inflation. These monies are also largely dedicated to streets and highways – primarily maintenance and preservation – and to a limited extent, system expansion.

We also need to complete gaps in our region’s transit, walking and biking networks to help expand affordable travel options, yet active transportation currently lacks a dedicated funding source. Expansion and operation of the transit system has relied heavily on payroll taxes for operations and competitive federal funding for high capacity transit. But the region’s demand for frequent and reliable transit service exceeds the capacity of the payroll tax to support it.

Until the 2009 passage of the Jobs and Transportation Act (House Bill 2001) raised the state gas tax in 2011 by six cents, this revenue source had not increased since 1993. Similarly, the federal gas tax has not increased since 1993. This failure of fundraising to keep pace with infrastructure needs has been particularly acute in Oregon, as most states have turned to increased sales tax levies to cope with the decrease in purchasing power of federal transportation funding. Lacking a sales tax or other tools, Oregon has focused on bonding strategies based on future revenue at the state level and therefore has not developed a long-term strategy.

As the region's economy and its labor and housing markets continue to recover from the Great Recession, resources remain limited for making the investments needed to support our growing communities. Diminished resources mean reduced ability to maintain, improve and expand existing transportation infrastructure.

As a result, the existing transportation system is incomplete, overburdened and underfunded. Because federal and state funding is not keeping pace with infrastructure operation and maintenance needs, a substantial share of funding for future regional transportation investments has shifted to local revenue sources. Local governments in the Portland metropolitan region (like others in Oregon) have turned to increased tax levies, road maintenance fees, system development charges and traffic impact fees in attempt to keep pace, although some communities have been more successful than others.



The adopted Regional Transportation Plan calls for stabilizing existing transportation revenue sources while securing new and innovative long-term sources of funding adequate to build, operate and maintain the regional transportation system for all modes of travel.

At a time when local, state and federal resources needed to address our aging infrastructure are limited, we have a unique opportunity to find a better way to support our communities, attract new business, and grow the economy.

The Climate Smart Communities Scenarios Project has shown that the same kinds of investments that can help address these infrastructure needs can also help achieve our greenhouse gas emissions reduction goals. These kinds of investments will also help communities grow in ways that will support local economies for decades to come. Working together, we can develop the local, regional, state and federal partnerships needed to invest in our communities and realize our plans.

TODAY'S CHOICES SHAPE THE FUTURE

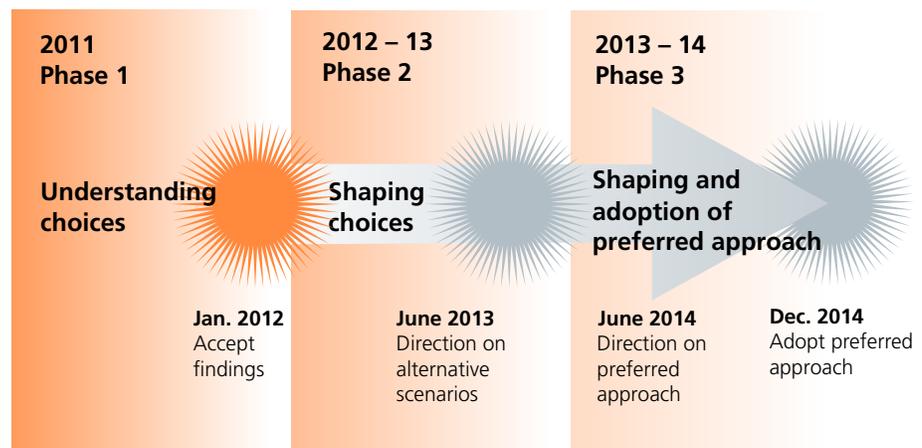
The region's charge from the state is to identify and adopt a preferred approach for meeting the target by December 2014. The choices we make today about how we live, work and get around will shape the future of the region for generations to come. The project is being completed in three phases – and has entered the third and final phase.

The first phase began in 2011 and concluded in early 2012. This phase consisted of testing strategies on a regional level to understand which strategies can most effectively help the region meet the state greenhouse gas emissions reduction mandate.

Most of the investments and actions under consideration are already being implemented to varying degrees across the region to realize community visions and other important economic, social and environmental goals.

As part of the first phase, Metro staff researched strategies used to reduce emissions in communities across the region, nation and around the world. This work resulted in a toolbox describing the range of potential strategies, their effectiveness at reducing emissions and other benefits they could bring to the region, if implemented.

Climate Smart Communities Scenarios Project timeline



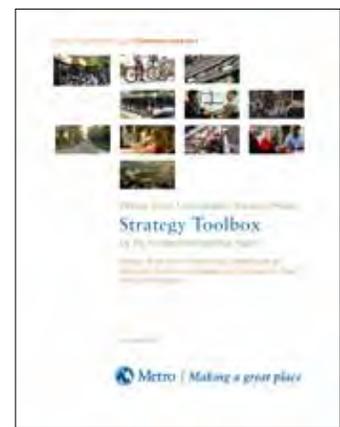
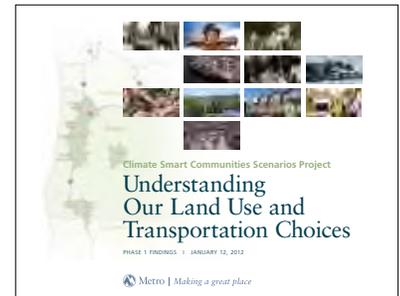
We found there are many ways to reduce emissions while creating healthy, more equitable communities and a vibrant regional economy, but no single solution will enable the region to meet the state’s target.

Investing in communities in ways that support local visions for the future will be key to reducing greenhouse gas emissions. Providing schools, services and shopping near where people live, improving bus and rail transit service, building new street connections, using technology to manage traffic flow, encouraging electric cars and providing safer routes for walking and biking all can help.

The second phase began in 2012 and concluded in October 2013. In this phase, Metro worked with community leaders to shape three approaches – or scenarios – and the criteria to be used to evaluate them. In the summer, 2013, Metro analyzed the three approaches to investing in locally adopted land use and transportation plans and policies.

The purpose of the analysis was to better understand the impact of those investments to inform the development of a preferred approach in 2014. Each scenario reflects choices about how and where the region invests to implement locally adopted plans and visions. They illustrate how different levels of leadership and investment could impact how the region grows over the next 25 years and how those investments might affect different aspects of livability for the region.

The results of the analysis were released in fall 2013.



Three approaches that we evaluated in 2013

SCENARIO



Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

SCENARIO



Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan which relies on increased revenue.

SCENARIO



New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

WHAT WE'VE LEARNED SO FAR

WE FOUND GOOD NEWS

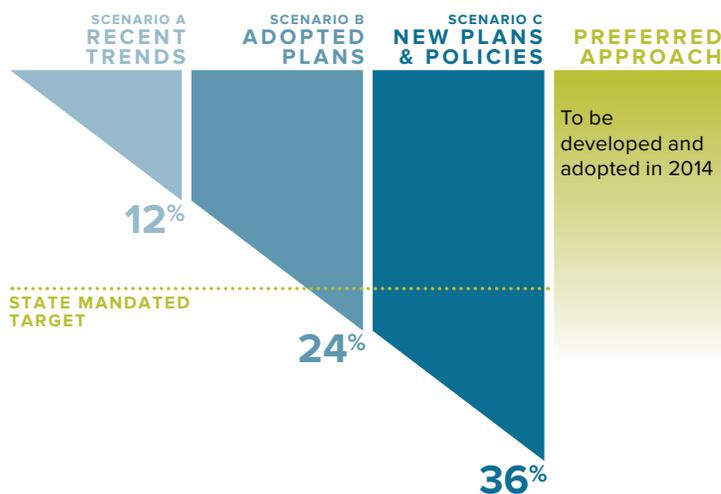
Our Phase 2 analysis indicates that adopted local and regional plans can meet the state target for reducing greenhouse gas emissions – if we make the investments and take the actions needed to implement those plans and make them a reality.

The analysis also identified potentially significant benefits that can be realized by implementing adopted plans (Scenario B) and new policies and plans (Scenario C), including cleaner air, improved public health and safety, reduced congestion and delay, and travel cost savings that come from driving shorter distances and using more fuel efficient vehicles.

The analysis showed that if we continue investing at our current levels (Scenario A) we will fall short of what has been asked of our region, as well as other outcomes we are working to achieve – healthy communities, clean air and water, reliable travel options, and a strong regional economy.

More results are provided in the “Supplemental Materials” section of this guide.

REDUCED GREENHOUSE GAS EMISSIONS PERCENT BELOW 2005 LEVELS



The reduction target is from 2005 emissions levels after reductions expected from cleaner fuels and more fuel-efficient vehicles.

BUT THERE IS MORE WORK TO BE DONE

We're all in this together Local, regional, state and federal partnerships are needed to make the investments and take the actions needed to implement adopted local and regional plans and meet the state target. Our findings can help the region make the case for the increased investment and new partnerships that will be needed to implement the preferred approach the Metro Council considers for adoption in December 2014.

Implementation goes hand in hand with community engagement and participation We must continue working with community leaders to build capacity of organizations and their members to participate in ongoing local and regional planning and implementation efforts. This will help ensure meaningful opportunities for participation of public health, social equity and environmental justice leaders and the communities they represent as we move forward to eliminate disparities.

A transition to cleaner fuels and more fuel-efficient vehicles is essential Oregon cannot achieve its greenhouse gas emissions reduction goals without the significant advancements in fleet and technology committed to by the state. It is critical for the Oregon Legislature and state commissions to prioritize investments and actions that will catalyze this transition to ensure assumptions used to set our region's emissions reduction target are realized.

Prioritizing investments that achieve multiple goals in combination with more funding will help us get there The greatest barrier to implementation is the lack of sufficient funding to make the investments needed for our local and regional plans to become a reality. More state funding is needed to leverage local and regional funding and assist future planning and implementation. With limited funding, it is even more important to prioritize investments that support healthy, equitable communities and a strong economy, while reducing greenhouse gas emissions to create the future we want for the region.

But first, the Metro Council is asking cities, counties, regional partners and the public to weigh in on which investments and actions from each of the three scenarios should go forward into a preferred approach and how we should pay for the needed investments.



A one-size-fits-all approach won't meet the needs of our diverse communities. A combination of all of the investments and actions under consideration is needed to help us realize our shared vision for making this region a great place for generations to come.

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The Portland metropolitan region pioneered approaches to land use and transportation planning that make it uniquely positioned to address the state climate goals, due to the solid, well-integrated transportation and land-use systems in place and a history of working together to address complex challenges at a regional scale.

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MOVING FORWARD

In the 1990s, regional policy discussions centered on how and where the region should grow to protect the things that make this region a great place to live, work and play. Those discussions led to the adoption of the region's long-range strategy, the 2040 Growth Concept. This strategy reflects shared community values and desired outcomes that continue to resonate today.

The preferred approach will not replace the 2040 Growth Concept nor be a stand-alone plan. Instead, it will be a set of recommended policies and actions for how the region moves forward to integrate reducing greenhouse gas emissions with ongoing efforts to create the future we want for our region.

THROUGH MAY 2014

Policymakers weigh in on which investments and actions should be included in the region's preferred approach

JUNE 2014

The Metro Council is asked to provide direction to staff on the draft preferred approach

SUMMER 2014

Evaluation of the preferred approach and development of a near-term implementation plan

SEPTEMBER 2014

Final public review of the preferred approach

DECEMBER 2014

Metro Council considers adoption of the preferred approach

JANUARY 2015

Submit adopted approach to Land Conservation and Development Commission for approval

WHAT IS THE PREFERRED APPROACH?

The preferred approach will be a set of recommended policies and actions for how the region moves forward to integrate reducing greenhouse gas emissions with ongoing efforts to create the future we want for our region.

LEGISLATION The Metro Council will consider adoption of legislation signaling the region's commitment to the preferred approach through the ongoing implementation of the 2040 Growth Concept. The legislation will include:

POLICIES Regional Framework Plan (RFP) amendments

- Changes to refine existing RFP policies and/or add new policies to achieve the preferred approach.

ACTIONS Recommended actions

- Menu of investments and other tools needed to achieve the preferred approach that can be tailored by each community to implement local visions.
- Near-term actions needed to implement and achieve the preferred approach. This could include:
 - state and federal legislative agendas that request funding, policy changes or other tools needed to achieve preferred approach
 - identification of potential/likely funding mechanisms for key actions
 - direction to the 2018 Regional Transportation Plan update
 - direction to future growth management decisions
 - direction for functional plan amendments that guide local implementation, if needed.
- Monitoring and reporting system that builds on existing performance monitoring requirements per ORS 197.301 and updates to the Regional Transportation Plan.



Through this collaborative effort, we can identify how the region should work together to develop new kinds of leadership and the local, regional, state and federal partnerships needed to invest in communities to make local and regional plans a reality.

POLICY QUESTIONS FOR 2014

WHAT CHOICES HAVE BEEN MADE?

In February, the Metro Policy Advisory Committee and Joint Policy Advisory Committee on Transportation approved a path for moving forward with an eight-step process to shape and adopt a preferred approach in 2014. As recommended by MPAC and JPACT, the preferred approach will start with the plans cities, counties and the region have already adopted – from local zoning, capital improvement, comprehensive, and transportation system plans to the 2040 Growth Concept and regional transportation plan – to create great communities and build a vibrant economy.

This includes managing the urban growth boundary through regular growth management cycles (currently every six years). In addition, MPAC and JPACT agreed to include assumptions for cleaner fuels and more fuel-efficient vehicles as defined by state agencies during the 2011 target-setting process. A third component they recommended be included in the preferred approach is the Statewide Transportation Strategy assumption for vehicle insurance paid by the miles driven.

WHAT CHOICES HAVE BEEN MADE?

In January and February of 2014, MPAC, JPACT and the Metro Council agreed these elements should be included in the draft preferred approach as a starting point:

- Implement adopted regional and local plans**
Implement the 2040 Growth Concept and local zoning, comprehensive and transportation plans and manage the urban growth boundary through regular growth management cycles.
- Transition to cleaner fuels and fuel-efficient vehicles**
Rely on state fleet and technology assumptions used when setting our region's target.
- Support vehicle insurance paid by the miles driven**
Use state assumptions for pay-as-you-drive insurance.

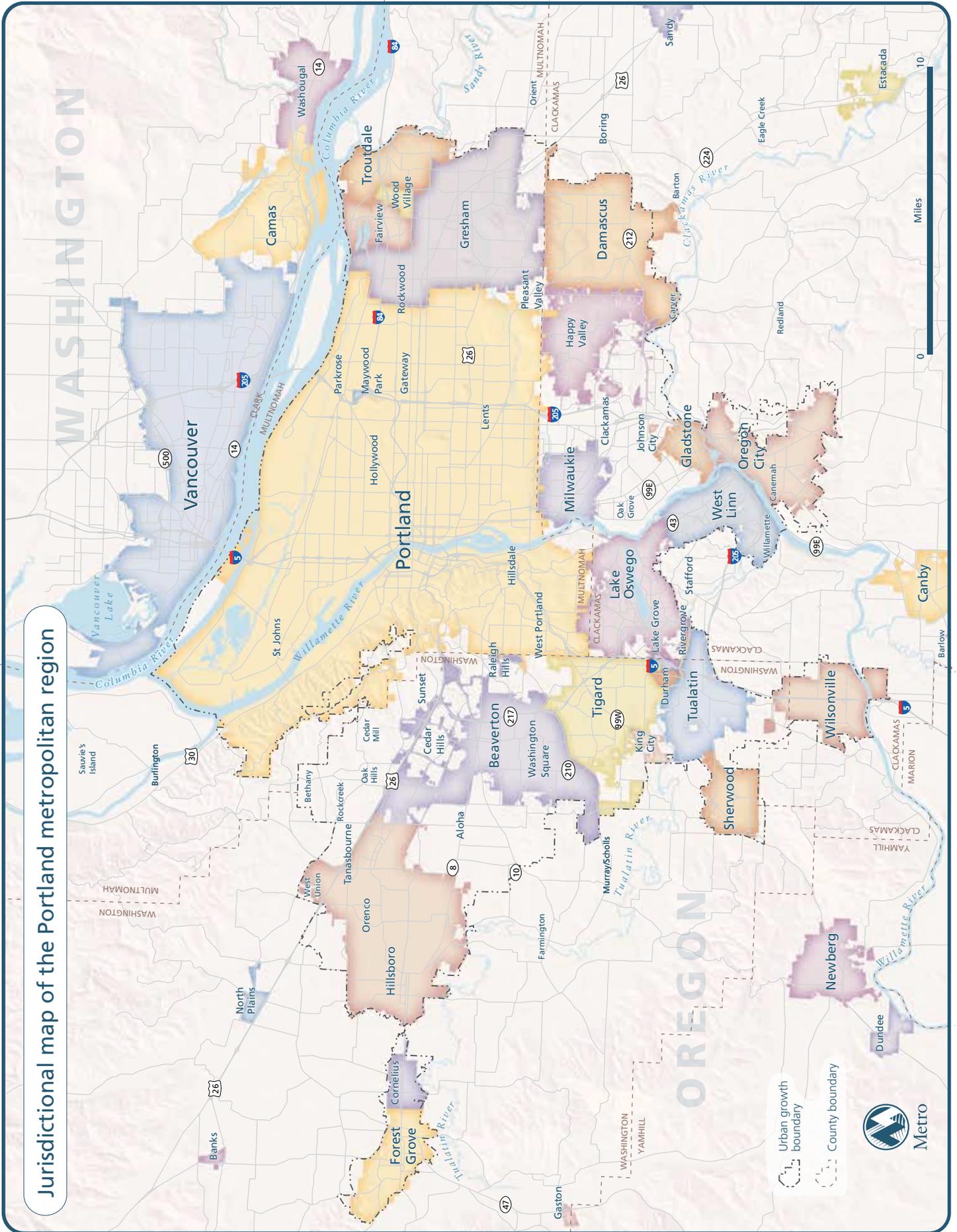
WHAT CHOICES DO WE STILL NEED TO MAKE?

Since January 2014, the Metro Council has engaged community and business leaders, local governments and the public on what mix of investments and actions best support their community's vision for healthy and equitable communities and a strong economy while reducing greenhouse gas emissions.

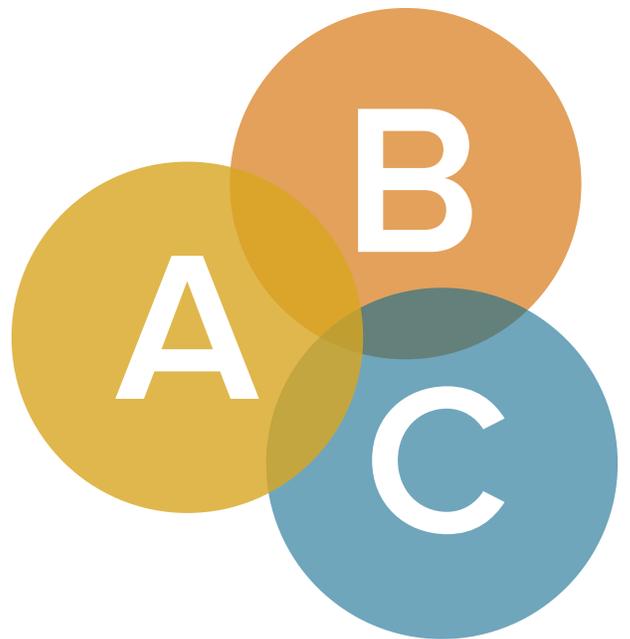
Through May 2014, policymakers will consider the results of the engagement activities and scenarios evaluation as they weigh in on these policy questions:

- How much transit should we provide by 2035?**
- How much should we use technology to actively manage the transportation system by 2035?**
- How much should we expand the reach of travel information programs by 2035?**
- How much of the planned active transportation network should we complete by 2035?**
- How much of the planned street and highway network should we complete by 2035?**
- How should local communities manage parking by 2035?**
- How should we pay for our investment choices by 2035?**





POLICY AREAS



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OVERVIEW OF POLICY AREAS

This section provides background information on the seven policy areas being considered by the region's policymakers:

- Make transit more convenient, frequent, accessible and affordable
- Use technology to actively manage the transportation system
- Provide information and incentives to expand the use of travel options
- Make biking and walking more safe and convenient
- Make streets and highways more safe, reliable and connected
- Manage parking to make efficient use of parking resources
- Identify potential ways to pay for our investment choices

The first three pages include a description of the policy, its potential climate benefit, cost, implementation benefits and challenges, and a summary of the how the policy is implemented for each scenario. The last page of each description summarizes emerging themes and specific comments provided during project public engagement activities.

EXPLANATION OF THE CLIMATE BENEFIT RATINGS

In Phase 1 of the project, staff conducted a sensitivity analysis to better understand the greenhouse gas emissions reduction potential of individual policies. The information derived from the sensitivity analysis was used to develop a five-star rating system for communicating the relative climate benefits of different policies. The ratings represent the potential effects of individual policy areas in isolation and do not capture variations that may occur from synergies between multiple policies.

Estimated reductions assumed in climate benefits ratings

less than 1%	★ ★ ★ ★ ★
1 – 2%	★ ★ ★ ★ ★
3 – 6%	★ ★ ★ ★ ★
7 – 15%	★ ★ ★ ★ ★
16 – 20%	★ ★ ★ ★ ★

Source Memo to TPAC and interested parties on Climate Smart Communities: Phase 1 Metropolitan GreenSTEP scenarios sensitivity analysis (June 21, 2012)

EXPLANATION OF THE RELATIVE COST RATINGS

Like the relative climate benefit ratings, the cost ratings provide a quick reference for comparing the relative cost of investments between policy areas. The estimated cost of each policy area for each scenario is provided below.

The relative climate benefit and cost ratings are provided to simplify information presented for purposes of discussion.

ESTIMATED COSTS FOR EACH SCENARIO BY POLICY AREA (2014\$)

	SCENARIO A	SCENARIO B	SCENARIO C
Transit capital	\$590 million	\$1.9 billion	\$5.1 billion
Transit operations	\$4.8 billion	\$5.3 billion	\$9.5 billion
Technology	\$113 million	\$135 million	\$193 million
Information	\$99 million	\$124 million	\$234 million
Active transportation	\$57 million	\$948 million	\$3.9 billion
Streets and highways capital¹	\$162 million	\$8.8 billion	\$11.8 billion
Parking	n/a	n/a	n/a
Total costs¹	\$6 billion	\$17 billion	\$31 billion

¹Table note does not include road-related operations, maintenance and preservation costs.



 RELATIVE CLIMATE BENEFIT


RELATIVE COST



Make transit more convenient, frequent, accessible and affordable

There are four key ways to make transit service more convenient, frequent, accessible and affordable. The effectiveness of each will vary depending on the mix of nearby land uses, the number of people living and working in the area, and the extent to which travel information, marketing and technology are used.

Frequency Increasing the frequency of transit service in combination with transit signal priority and bus lanes makes transit faster and more convenient.

System expansion Providing new community and regional transit connections improves access to jobs and community services and makes it easier to complete some trips without multiple transfers.

Transit access Building safe and direct walking and biking routes and crossings that connect to stops makes transit more accessible and convenient.

Fares Providing reduced fares makes transit more affordable; effectiveness depends on the design of the fare system and the cost.

Transit is provided in the region by TriMet and South Metro Area Rapid Transit (SMART) in partnership with Metro, cities, counties, employers, business associations and non-profit organizations.

BENEFITS

- improves access to jobs, the workforce, and goods and services, boosting business revenues
- creates jobs and saves consumers and employers money
- stimulates development, generating local and state revenue
- provides drivers an alternative to congested roadways and supports freight movements by taking cars off the road
- increases physical activity
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- transit demand outpacing funding
- enhancing existing service while expanding coverage and frequency to growing areas
- reduced revenue and federal funding, leading to increased fares and service cuts
- preserving affordable housing options near transit
- ensuring safe and comfortable access to transit for pedestrians, cyclists and drivers
- transit-dependent populations locating in parts of the region that are harder to serve with transit

How much transit should we provide by 2035?

TRANSIT AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Daily revenue hours	5,600	6,200	11,200
Service expansion <i>(increase from 2010 level)</i>	14% increase	27% increase	129% increase
Rush hour frequency	10-minute service on 10 routes	10-minute service on 13 routes	10-minute service on 37 routes
Off-peak frequency	30-minute service on most routes	20-minute service on most routes	15 or 20-minute service on most routes
New high capacity transit connections	None	Planned connections completed, such as the extension to Vancouver, WA	All regional centers and more town centers served Priority high capacity transit system plan and Southwest Corridor completed
Other service enhancements	Westside Express Service (WES) and Portland streetcar operate at 2010 frequencies	Same as Scenario A, plus more planned Portland streetcar connections completed	WES operates all day with 15-minute service Locally-developed Service Enhancement Plans (SEPs) and the planned Portland Streetcar System Plan mostly completed
Public and private shuttles	Existing private shuttles continue to operate between large work sites and major transit stops	Additional major employers and some community-based organizations work with TriMet to operate shuttles	More major employers and some community-based organizations work with TriMet to operate shuttles
Fares	Reduced fares provided to youth, older adults and disabled persons	Same as Scenario A	Same as Scenario A, plus reduced fares provided to low-income families
Estimated capital cost* (2014\$)	\$590 million	\$1.9 billion	\$5.1 billion
Estimated service operating costs** (2014\$)	\$4.8 billion (\$187 million per year)	\$5.3 billion (\$207 million per year)	\$9.5 billion (\$374 million per year)

* Capital costs reflect HCT capital costs plus fleet replacement and expansion costs.

** Operating costs for TriMet service were calculated by annualizing the daily revenue hours proposed for each scenario and applying TriMet's average operating cost per revenue hour, with cost by mode weighted by the proportion of service provided on each mode. SMART operating costs were calculated by assuming SMART's FY 11-12 annual operating costs are maintained through 2035.

(See Supplemental materials section, Phase 2: Transit Access at a Glance.)

SCENARIO



Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

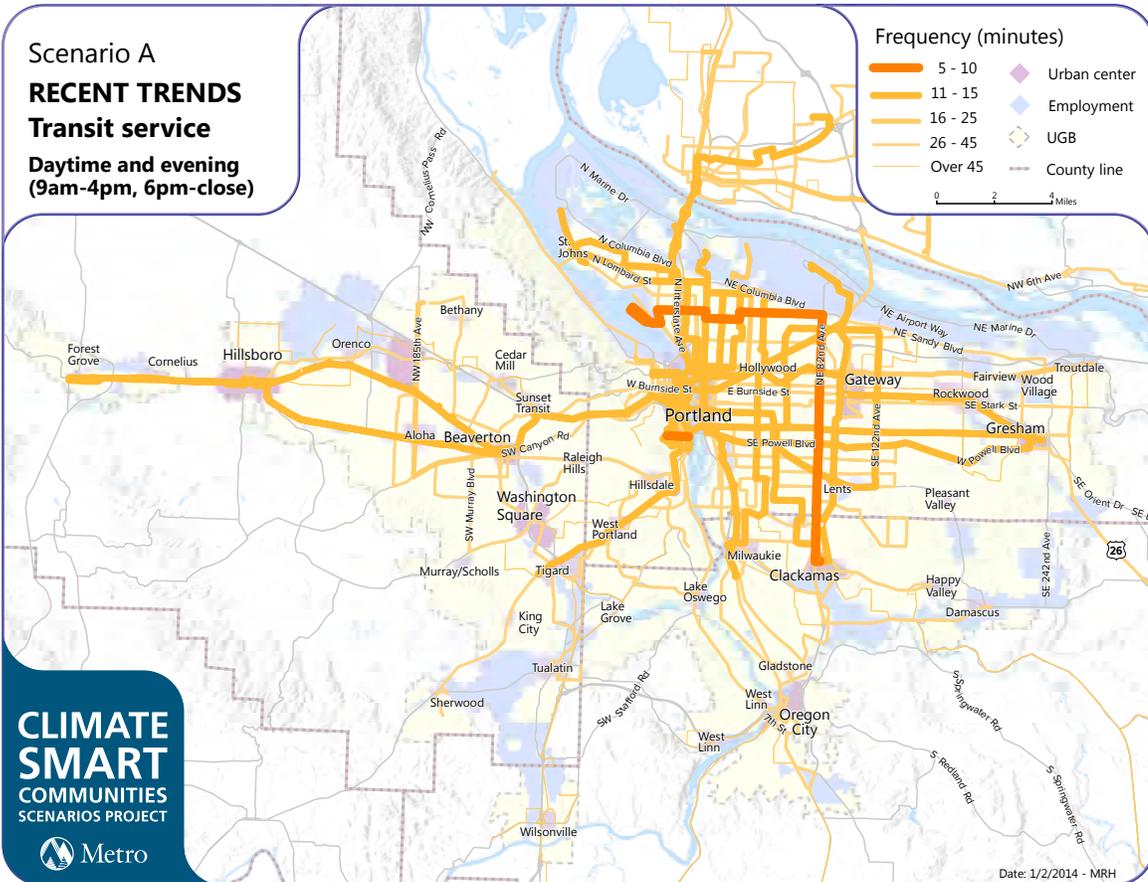
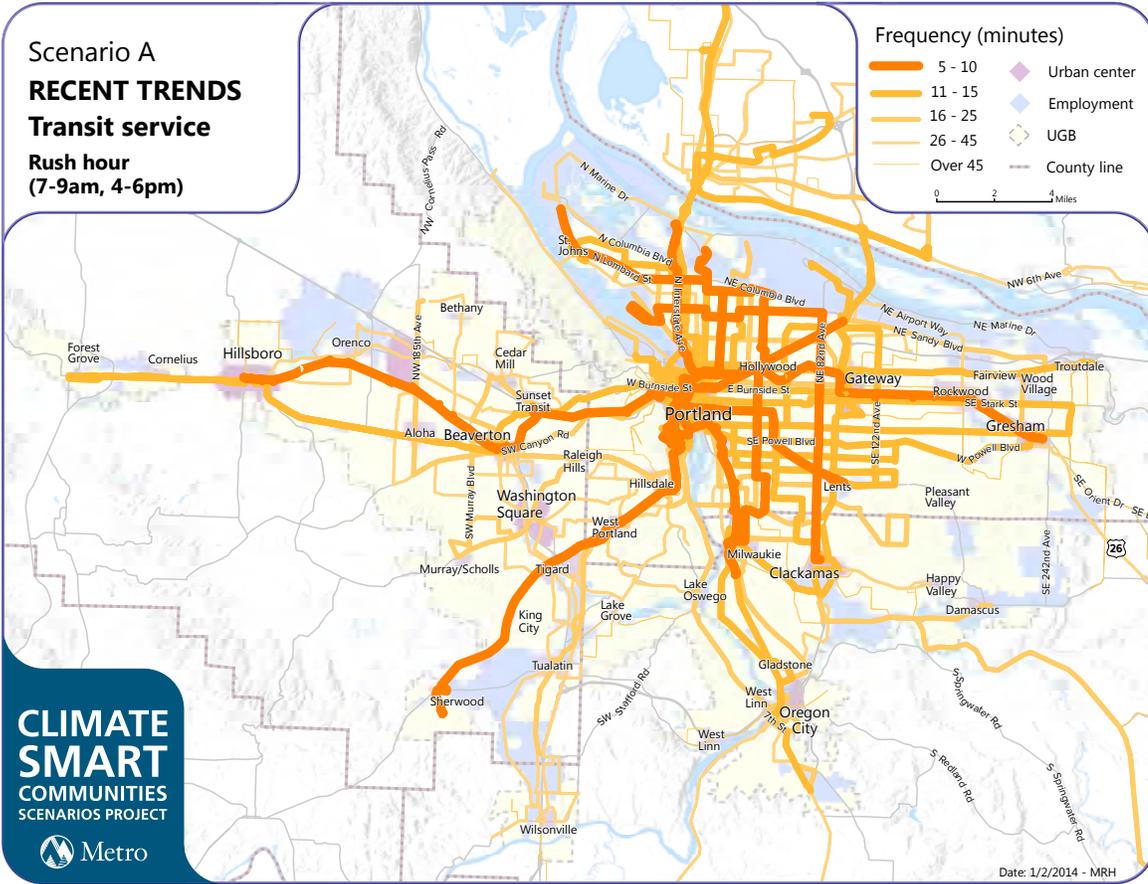
31% jobs
24% households
31% low-income households

Estimated jobs and households within 1/4-mile of 10-minute or better service by 2035

6% jobs
4% households
5% low-income households

Estimated jobs and households within 1/4-mile of 10-minute or better service by 2035

Note These maps are for research purposes only and do not reflect current or future policy decisions of the Metro Council, MPAC or JPACT.



Scenario A
RECENT TRENDS
Transit service
Rush hour
(7-9am, 4-6pm)

CLIMATE SMART
COMMUNITIES
 SCENARIOS PROJECT

Scenario A
RECENT TRENDS
Transit service
Daytime and evening
(9am-4pm, 6pm-close)

CLIMATE SMART
COMMUNITIES
 SCENARIOS PROJECT

SCENARIO

B

Adopted Plans

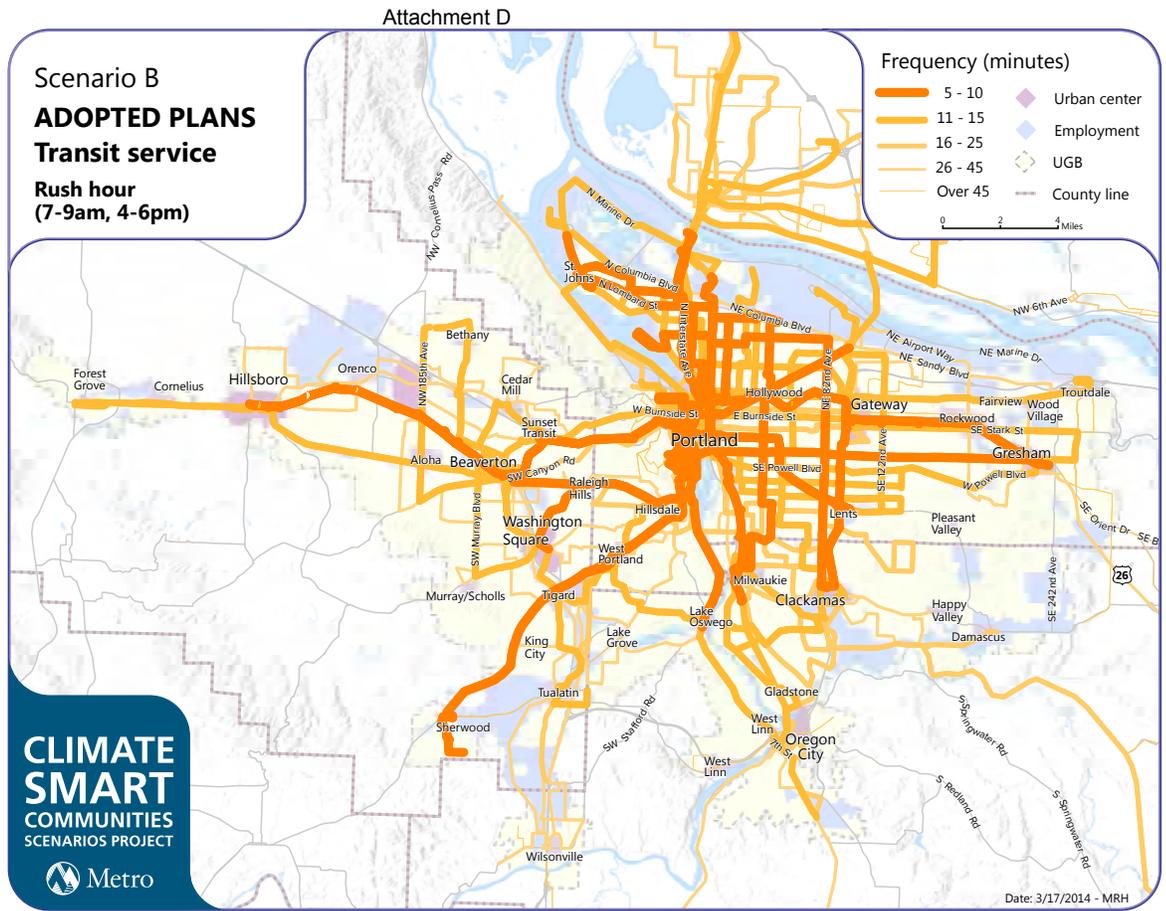
This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

33% jobs

27% households

34% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by

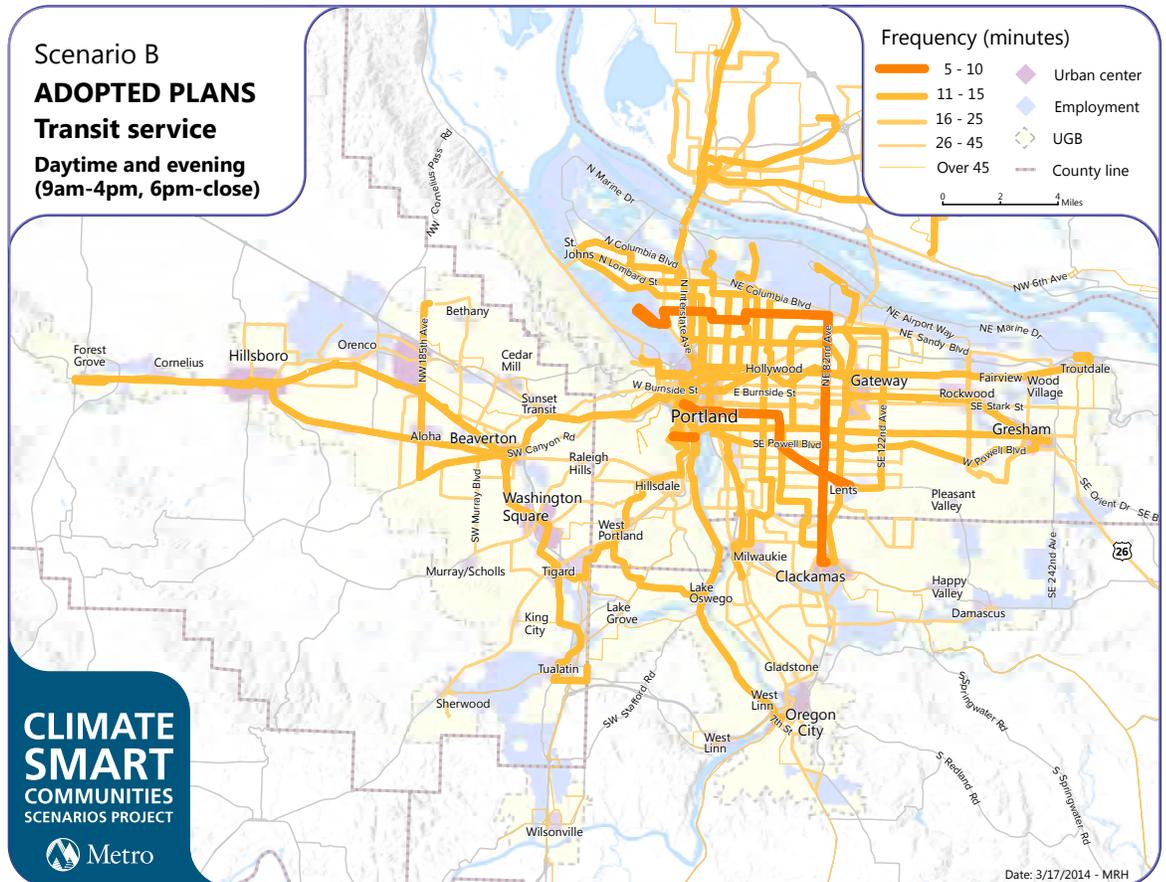


6% jobs

4% households

6% low-income households

Estimated jobs and households within ¼-mile of 10-minute or better service by 2035



SCENARIO

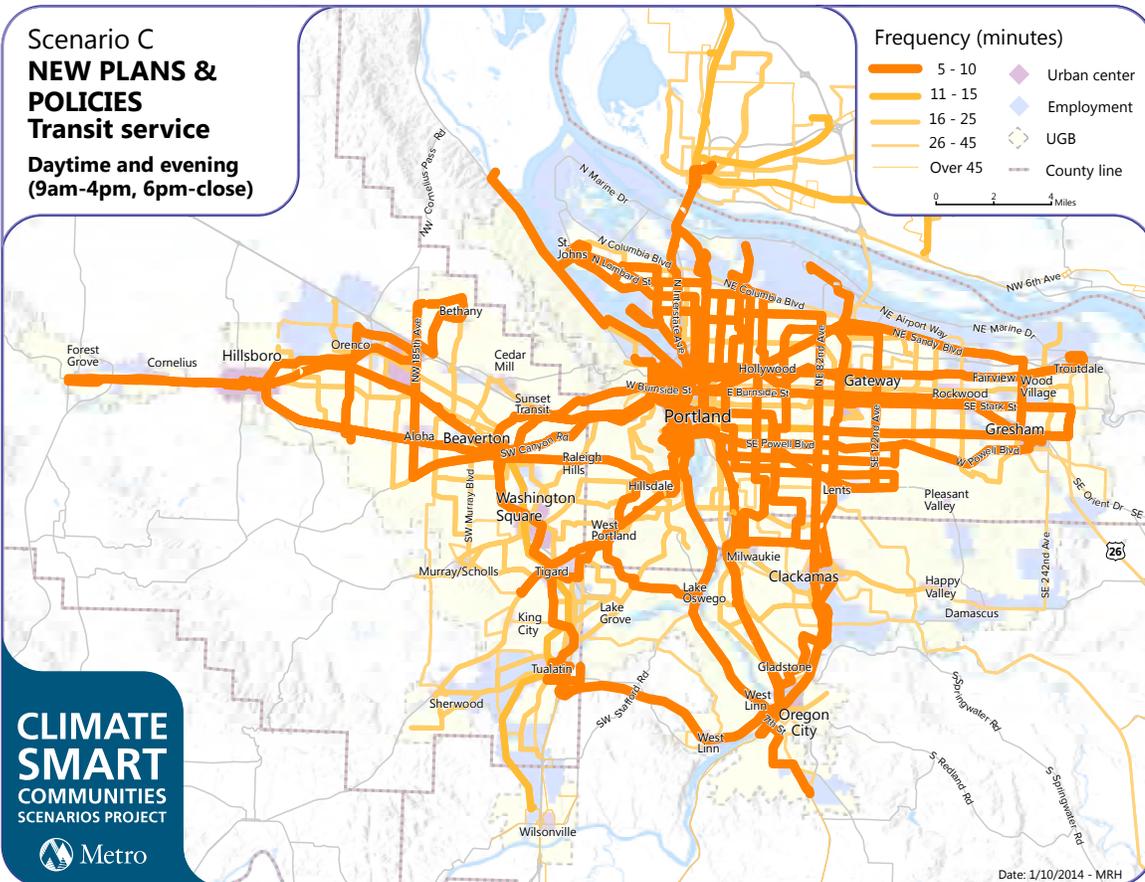
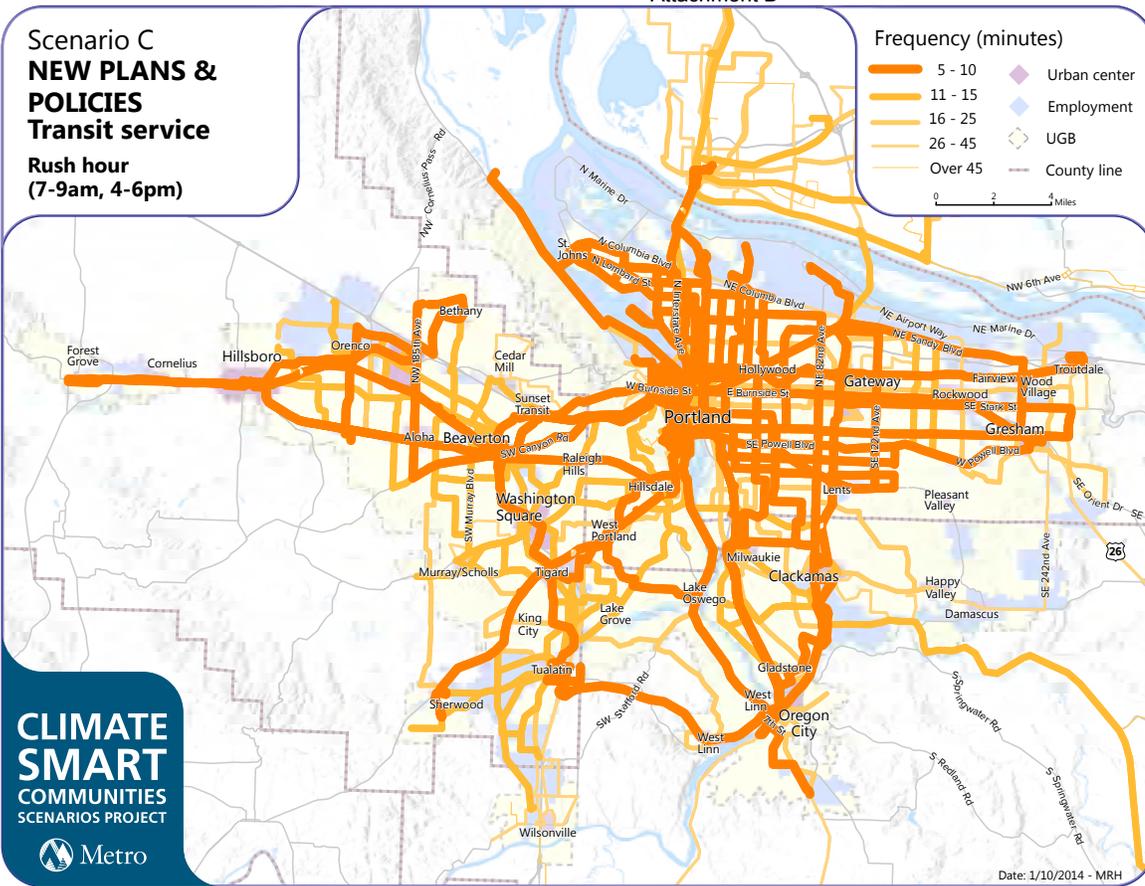


New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

42% jobs
32% households
40% low-income households

Estimated jobs and households within 1/4-mile of 10-minute or better service by 2035



23% jobs
20% households
26% low-income households

Estimated jobs and households within 1/4-mile of 10-minute or better service by 2035



RELATIVE CLIMATE BENEFIT

RELATIVE COST


Use technology to actively manage the transportation system

Using technology to actively manage the Portland metropolitan region's transportation system means using intelligent transportation systems (ITS) and services to reduce vehicle idling associated with delay, making walking and biking more safe and convenient, and helping improve the speed and reliability of transit. Nearly half of all congestion is caused by incidents and other factors that can be addressed using these strategies.

Local, regional and state agencies work together to implement transportation system technologies. Agreements between agencies guide sharing of data and technology, operating procedures for managing traffic, and the ongoing maintenance and enhancement of technology, data collection and monitoring systems.

Arterial corridor management includes advanced technology at each intersection to actively manage traffic flow. This may include coordinated or adaptive signal timing; advanced signal operations such as cameras, flashing yellow arrows, bike signals and pedestrian count down signs; and communication to a local traffic operations center and the centralized traffic signal system.

Freeway corridor management includes advanced technology to manage access to the freeways, detect traffic levels and weather conditions, provide information with variable message signs and variable speed limit signs, and deploying incident response patrols that quickly clear breakdowns, crashes and debris. These tools connect to a regional traffic operations center.

Traveler information includes using variable message and speed signs and 511 internet and phone services to provide travelers with up-to-date information regarding traffic and weather conditions, incidents, travel times, alternate routes, construction, or special events.

BENEFITS

- provides near-term benefits
- reduces congestion and delay
- makes traveler experience more reliable
- saves public agencies, consumers and businesses time and money
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- requires ongoing funding to maintain operations and monitoring systems
- requires significant cross-jurisdictional coordination
- workforce training gaps

How much should we use technology to actively manage the transportation system by 2035?

TECHNOLOGY AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Advanced traffic signal operations	Traffic signals on some major arterials	Traffic signals on many major arterials	All traffic signals are connected to a centralized system
Transit signal priority	Some bus routes with 10-minute service	All bus routes with 10-minute service	All bus routes with 10-minute service
Freeway ramp meters	Most urban interchanges	Same as Scenario A	All urban interchanges
Freeway variable speed signs	None	Deployed in most high incident locations	Deployed in all high incident locations
Incident response patrols	Some incident response patrols are deployed on area freeways	More incident response patrols are deployed on area freeways	Incident response patrols are deployed on area freeways and major arterials adjacent to freeways
Estimated cost (2014\$)	\$113 million	\$135 million	\$193 million

SCENARIO



Scenario A

RECENT TRENDS

Transportation System Management and Operations

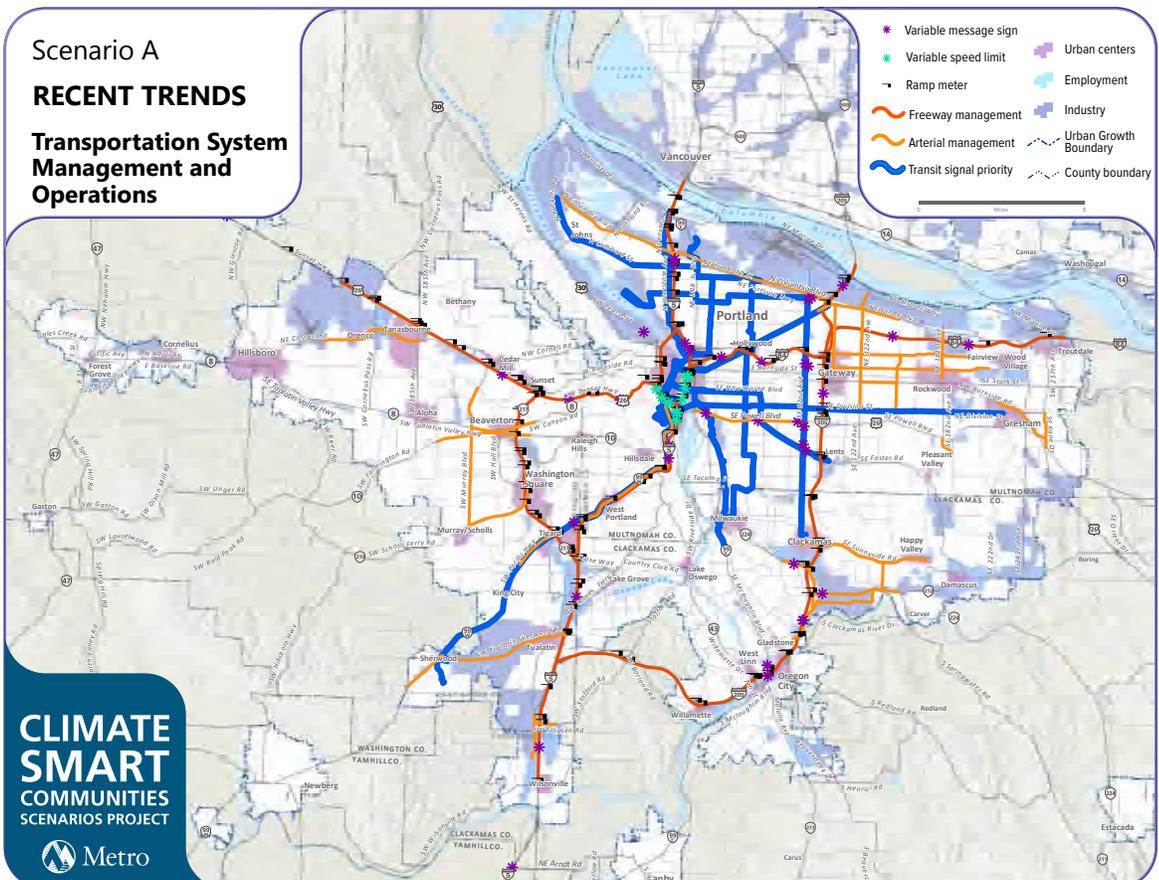
Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

10% on arterials and freeways

Estimated delay reduction by 2035

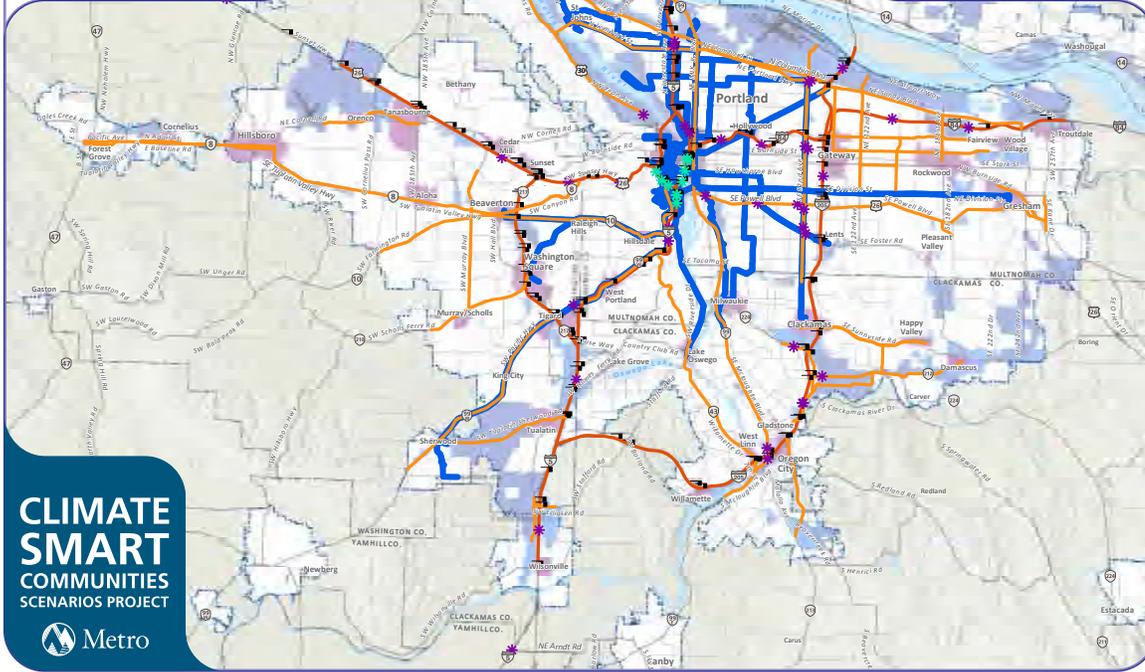
Note These maps are for research purposes only and do not reflect current or future policy decisions of the Metro Council, MPAC or JPACT.



Scenario B

ADOPTED PLANS

Transportation System Management and Operations



SCENARIO



Adopted Plans

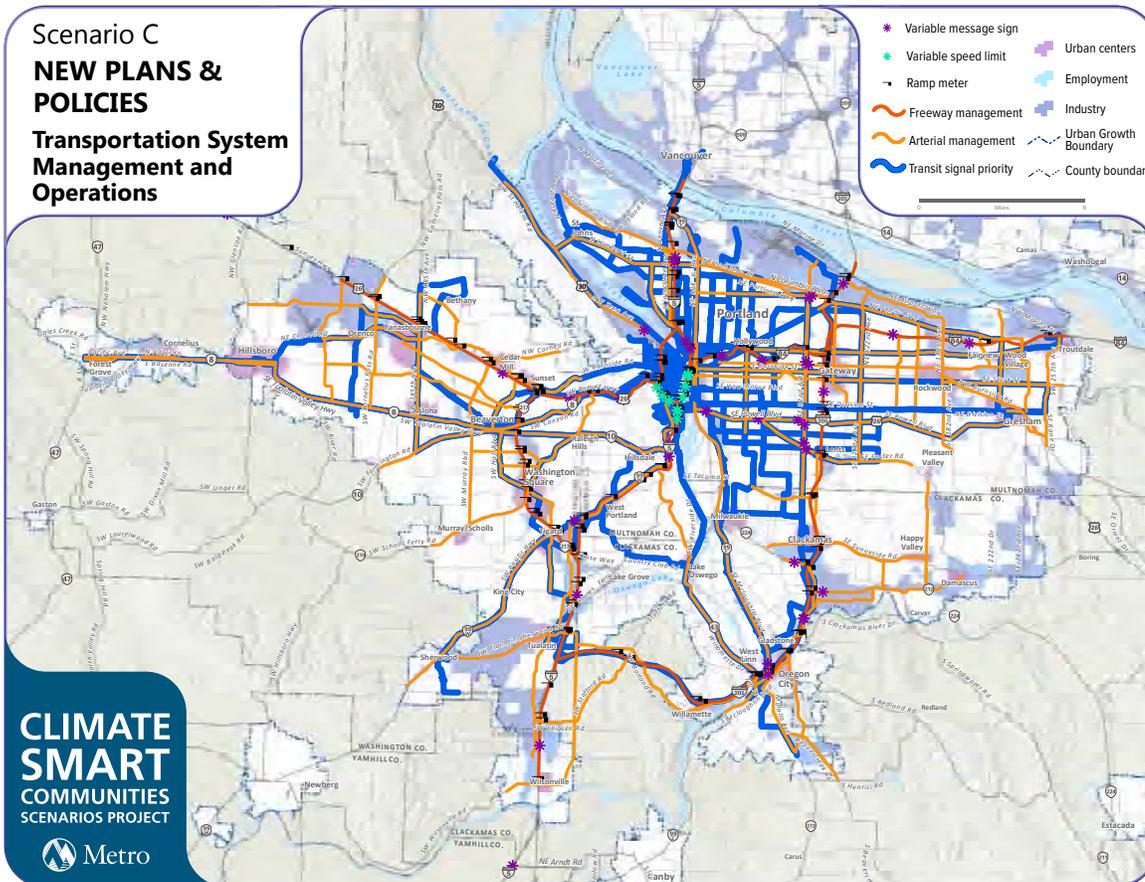
This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

20% on arterials and freeways
Estimated delay reduction by 2035

Scenario C

NEW PLANS & POLICIES

Transportation System Management and Operations



SCENARIO



New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

35% on arterials and freeways
Estimated delay reduction by 2035



RELATIVE CLIMATE BENEFIT

RELATIVE COST


Provide information and incentives to expand the use of travel options

Public awareness, education and travel options support tools are cost-effective ways to improve the efficiency of the existing transportation system through increased use of travel options such as walking, biking, carsharing, carpooling and taking transit. Local, regional and state agencies work together with businesses and non-profit organizations to implement programs in coordination with other capital investments. Metro coordinates partners' efforts, sets strategic direction, evaluates outcomes, and manages grant funding.

Public awareness strategies include promoting information about travel choices and teaching the public about eco-driving: maintaining vehicles to operate more efficiently and practicing driving habits that can help save time and money while reducing greenhouse emissions.

Commuter programs are employer-based outreach efforts that include (1) financial incentives, such as transit pass programs and offering cash instead of parking subsidies; (2) facilities and services, such as carpooling programs, bicycle parking, emergency rides home, and work-place competitions; and (3) flexible scheduling such as working from home or compressed work weeks.

Individualized Marketing (IM) is an outreach method that encourages individuals, families or employees interested in making changes in their travel choices to participate in a program. A combination of information and incentives is tailored to each person's or family's specific travel needs. IM can be part of a comprehensive commuter program.

Travel options support tools reduce barriers to travel options and support continued use with tools such as the *Drive Less. Connect.* online carpool matching; trip planning tools; wayfinding signage; bike racks; and carsharing.

BENEFITS

- increases cost-effectiveness of capital investments in transportation
- saves public agencies, consumers and businesses time and money
- preserves road capacity
- reduces congestion and delay
- increases physical activity and reduces health care costs
- reduces air pollution and air toxics

CHALLENGES

- program partners need ongoing tools and resources to increase outcomes
- factors such as families with children, long transit times, night and weekend work shifts not served by transit
- major gaps exist in walking and biking routes across the region
- consistent data collection to support performance measurement

How much should we expand the reach of travel information programs by 2035?

TRAVEL INFORMATION PROGRAMS AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Individualized marketing participation	30% of households	Same as Scenario A	60% of households participate Same as Scenario B, plus the addition of Safe Routes to school and equity-based campaigns
Commuter program participation	20% of employees reached (same as 2010) Oregon Employee Commute Options (ECO) rules require work sites with more than 100 employees to have workplace programs	Same as Scenario A	40% of employees reached ECO rules now include work sites with more than 50 employees
Public awareness marketing campaign	50% of public reached Existing ongoing and short-term campaigns lead to more awareness of <i>DriveLess. Connect.</i>	Same as Scenario A, plus added resources promote new travel tools, regional efforts and safety education	60% of public reached Scenario B, plus regionally specific campaigns dedicated to safety and underserved communities
Eco-driving participation	0% of households reached (same as 2010) Statewide program is newly launched	30% of households reached	60% of households reached
Provisions of travel options support tools	2010 program funding levels allow for completion of several new wayfinding signage and bike rack projects	Same as Scenario A, plus public-private partnerships to create new online, print and on-street travel tools	Same as Scenario B, plus better public-private data integration and more resources for more support tools
Estimated cost (2014\$)	\$99 million	\$124 million	\$234 million

SCENARIO

A

Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

SCENARIO

B

Adopted Plans

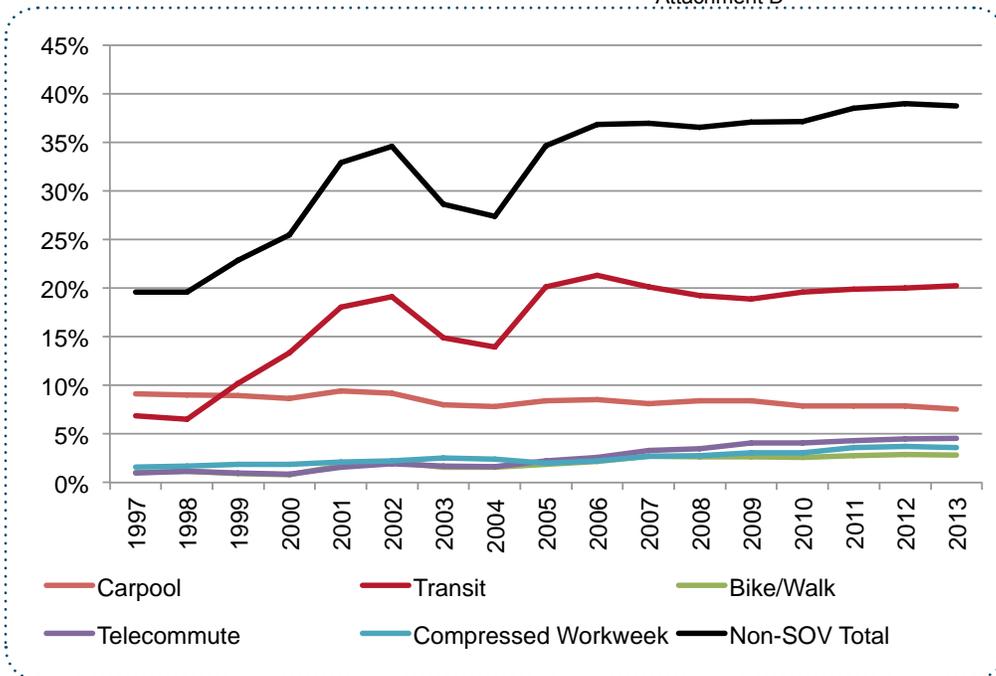
This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

SCENARIO

C

New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.



EFFECTIVENESS OF EMPLOYER COMMUTER PROGRAMS (1997 - 2013)

The TriMet, Wilsonville SMART and TMA employer outreach programs have made significant progress with reducing drive-alone trips. Since 1996, employee commute trips that used non-drive-alone modes (transit, bicycling, walking, carpooling/vanpooling and telecommuting) rose from 20% to over 39% among participating employers.

EFFECTIVENESS OF COMMUNITY AND NEIGHBORHOOD PROGRAMS

Community outreach programs such as Portland Sunday Parkways and Wilsonville Sunday Streets encourage residents to use travel options by exploring their neighborhoods on foot and bike without motorized traffic. Sunday Parkways events have attracted 400,000 attendees since 2008 and the Wilsonville Sunday Streets event attracted more than 5,000 participants in 2012.

Other examples of valuable community outreach and educational programs include the Community Cycling Center's program to reduce barriers to biking and Metro's Vámonos program, both of which provide communities across the region with the skills and resources to become more active by walking, biking, and using transit for their transportation needs.

In 2004, the City of Portland launched the Interstate TravelSmart individualized marketing project in conjunction with the opening of the MAX Yellow Line. Households that received individualized marketing made nearly twice as many transit trips compared to a similar group of households that did not participate in the marketing campaign. In addition, transit use increased nearly 15 percent during the SmartTrips project along the MAX Green Line in 2010. Follow-up surveys show that household travel behavior is sustained for at least two years after a project has been completed.





RELATIVE CLIMATE BENEFIT

RELATIVE COST


Make biking and walking more safe and convenient

Active transportation is human-powered travel that engages people in healthy physical activity while they go from place to place. Examples include walking, biking, pushing strollers, using wheelchairs or other mobility devices, skateboarding, and rollerblading. Active transportation is an essential component of public transportation because most of these trips begin and end with walking or biking.

Today, about 50 percent of the regional active transportation network is complete. Nearly 18 percent of all trips in the region are made by walking and biking, a higher share than many other places. Approximately 45 percent of all trips made by car in the region are less than three miles and 15 percent are less than one mile. With a complete active transportation network supported by education and incentives, many of the short trips made by car could be replaced by walking and biking. (See separate summary on providing information and incentives to expand use of travel options.)

For active travel, transitioning between modes is easy when sidewalks and bicycle routes are connected and complete, wayfinding is coordinated, and transit stops are connected by sidewalks and have shelters and places to sit. Biking to work and other places is supported when bicycles are accommodated on transit vehicles, safe and secure bicycle parking is available at transit shelters and community destinations, and adequate room is provided for walkers and bicyclists on shared pathways. Regional trails and transit function better when they are integrated with on-street walking and biking routes.

BENEFITS

- increases access to jobs and services
- provides low-cost travel options
- supports economic development, local businesses and tourism
- increases physical activity and reduces health care costs
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

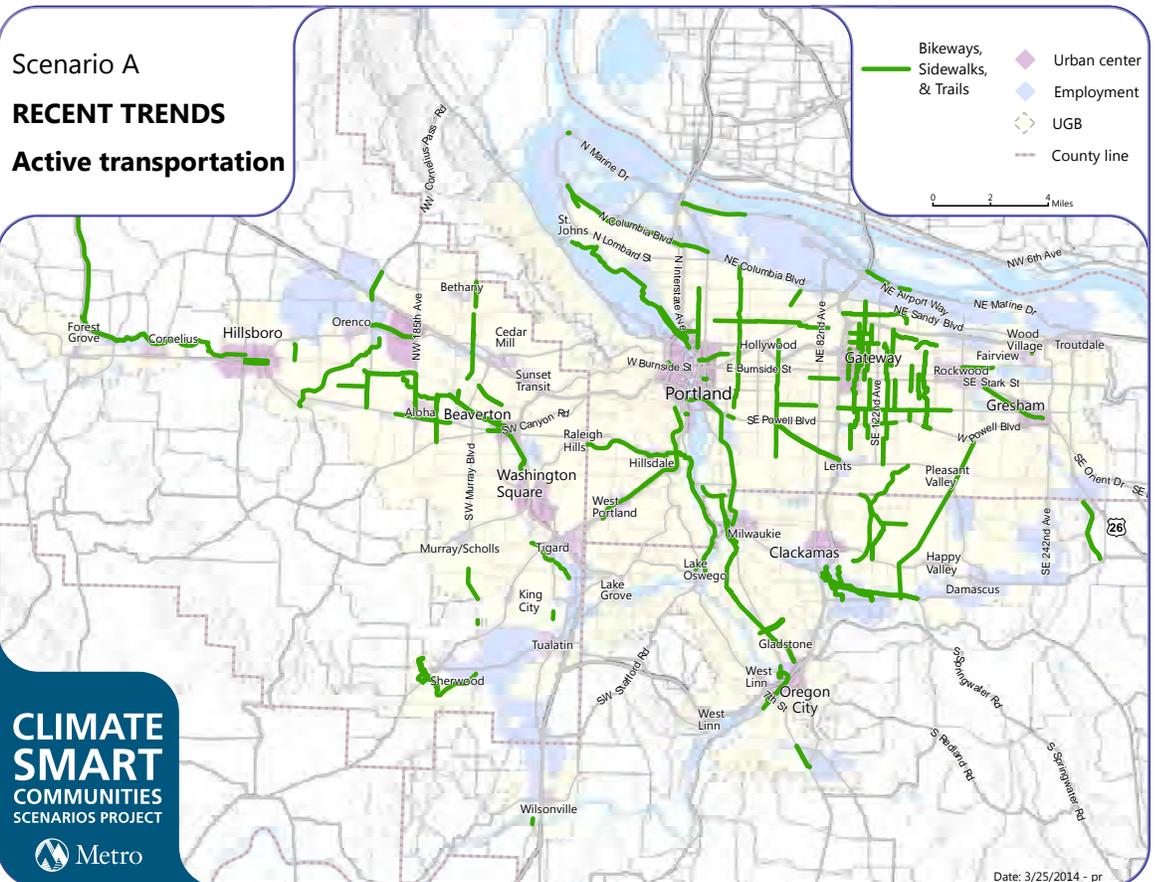
- major gaps exist in walking and biking routes across the region
- gaps in the active transportation network affect safety, convenience and access to transit
- many would like to walk or bike but feel unsafe
- many lack access to walking and biking routes
- limited dedicated funding is declining

How much of the planned active transportation network should we complete by 2035?

ACTIVE TRANSPORTATION AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Completion of regional active transportation network	Federally funded planning and capital projects reflecting existing funding are largely dedicated to transit and road investments	Same as Scenario A, plus planned off-street trails and on-street sidewalk and bikeway projects, such as bicycle lanes, cycle tracks, bicycle boulevards, sidewalks and crossing improvements included in financially constrained RTP	Same as Scenario B, plus full build-out of planned off-street trails, on-street sidewalk and bikeway projects, and improvements to existing facilities
Trails	38% completed	79% completed	100% completed
Bikeways	63% completed	84% completed	100% completed
Sidewalks	54% completed	62% completed	100% completed
Estimated cost (2014\$)	\$57 million	\$948 million	\$3.9 billion

SCENARIO



Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

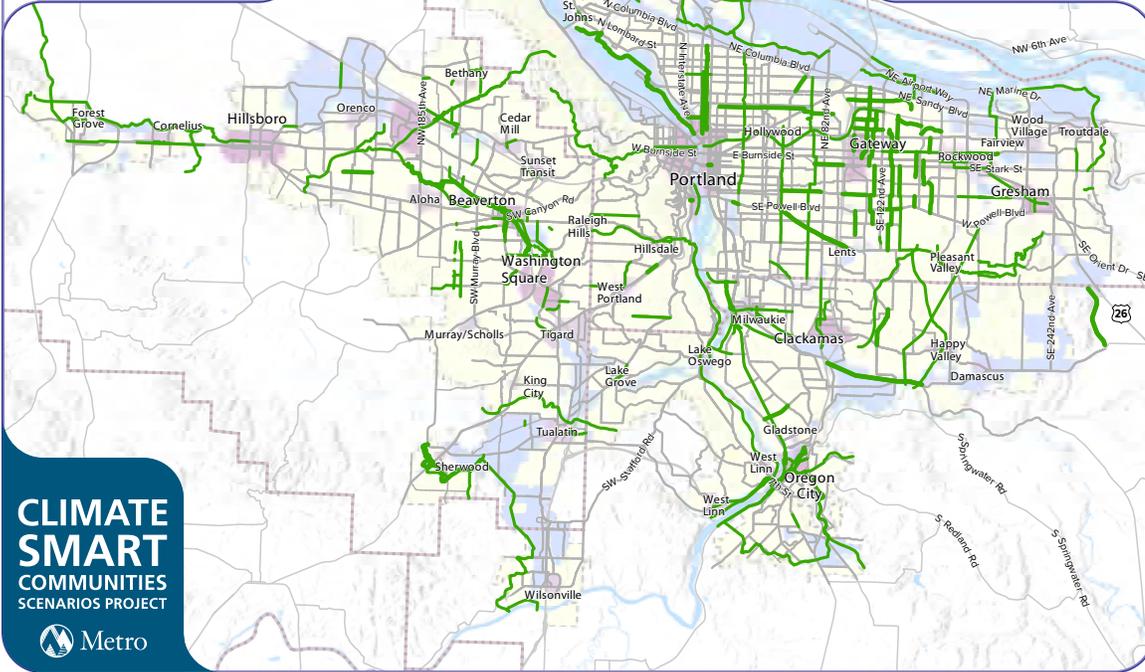
58

Estimated lives saved annually from increased physical activity by 2035

Note These maps are for research purposes only and do not reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

Scenario B

ADOPTED PLANS
Active Transportation



CLIMATE SMART
COMMUNITIES
SCENARIOS PROJECT
Metro

SCENARIO



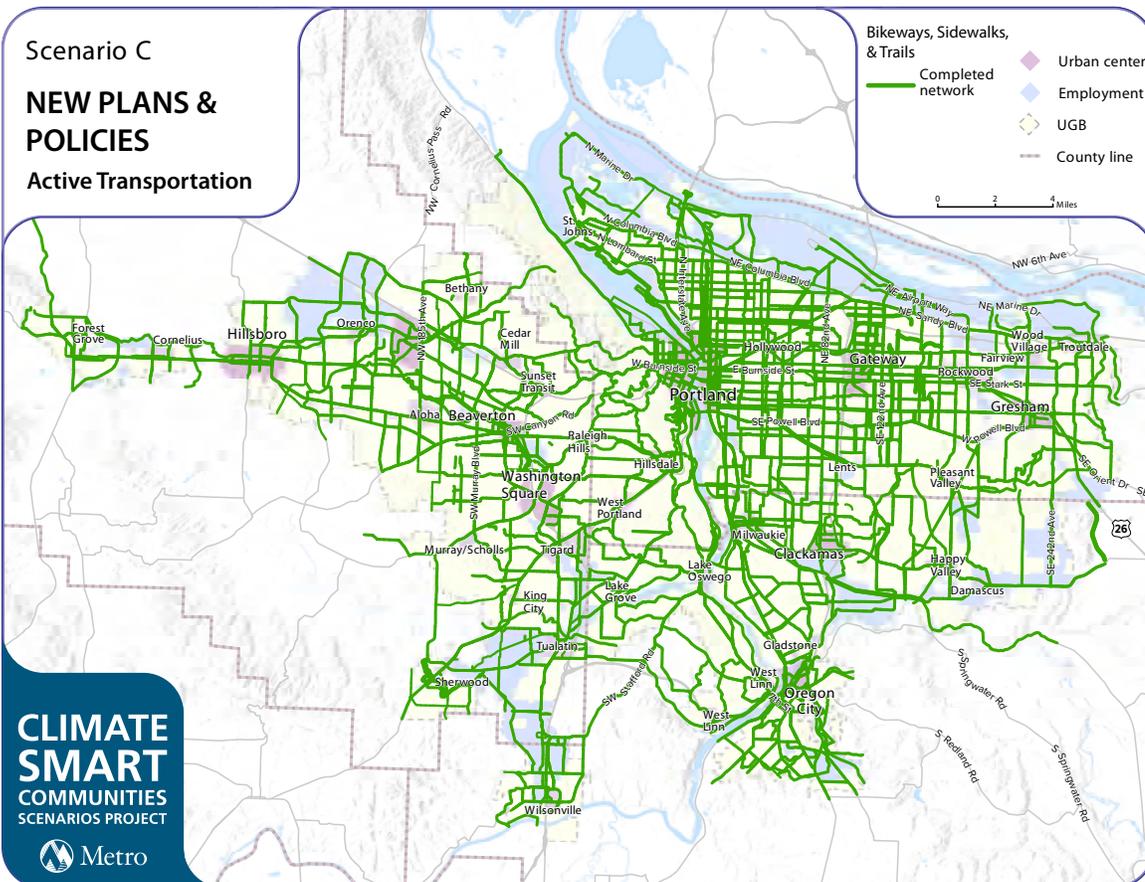
Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

89
Estimated lives saved annually from increased physical activity by 2035

Scenario C

NEW PLANS & POLICIES
Active Transportation



CLIMATE SMART
COMMUNITIES
SCENARIOS PROJECT
Metro

SCENARIO



New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

116
Estimated lives saved annually from increased physical activity by 2035



RELATIVE CLIMATE BENEFIT

RELATIVE COST


Make streets and highways more safe, reliable and connected

Today, nearly 45 percent of all trips in the region made by car are less than three miles, and 15 percent are less than one mile. When road networks lack multiple routes serving the same destinations, short trips must use major travel corridors designed for freight and regional traffic, adding to congestion.

There are three key ways to make streets and highways more safe, reliable and connected to serve longer trips across the region on highways, shorter trips on arterial streets, and the shortest trips on local streets.

Maintenance and efficient operation of the existing road system Keeping the road system in good repair and using information and technology to manage travel demand and traffic flow help improve safety, and boost efficiency of the existing system. With limited funding, more effort is being made to maximize system operations prior to building new capacity in the region. (See separate summaries describing the use of technology and information.)

Street connectivity Building a well-connected network of complete streets including new local and major street connections shortens trips, improves access to community and regional destinations, and helps preserve the capacity and function of highways in the region for freight and longer trips. These connections include designs that support walking and biking, and, in some areas, provide critical freight access between industrial areas, intermodal facilities and the interstate highway system.

Network expansion Adding lane miles to relieve congestion is an expensive approach, and will not solve congestion on its own. Targeted widening of streets and highways along with other strategies helps connect goods to market and support travel across the region.

BENEFITS

- improves access to jobs, goods and services, boosting business revenue
- creates jobs and stimulates development, boosting the economy
- reduces delay, saving businesses time and money
- reduces risk of traffic fatalities and injuries
- reduces emergency response time

CHALLENGES

- declining purchasing power of existing funding sources, growing maintenance backlog, and rising construction costs
- may induce more traffic
- potential community impacts, such as displacement and noise
- concentration of air pollutants and air toxics in major travel corridors

What people are saying

Street and highway improvements are needed to help move freight more efficiently to make the region more economically competitive.

Make road investments that improve access and efficiency for all users – bike, pedestrian, auto, transit and freight.

Investments in transit, walking and biking can help freight move more efficiently because they help reduce the need to drive for some trips.

Emerging themes

- Keeping existing roads and highways in good condition is a higher priority than adding capacity or building new roads.
- Improved connectivity is a priority for suburban communities.
- Build a well-connected network of complete streets that prioritize safe and convenient pedestrian and bicycle access; respecting existing communities and the natural environment.
- Maximize system operations by implementing management strategies prior to building new motor vehicle capacity, where appropriate.

Key takeaways to share with others

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RELATIVE CLIMATE BENEFIT

RELATIVE COST


Manage parking to make efficient use of parking resources

Parking management refers to various policies and programs that result in more efficient use of parking resources. Parking management is implemented through city and county development codes. Managing parking works best when used in a complementary fashion with other strategies; it is less effective in areas where transit or bicycle and pedestrian infrastructure is lacking.

Planning approaches include conducting assessments of the parking supply to better understand needs. A typical urban parking space has an annualized cost of \$600 to \$1,200 to maintain, while structured parking construction costs averages \$15,000 per space.

On-street parking approaches include spaces that are timed, metered, designated for certain uses or have no restriction. Examples of these different approaches include charging long-term or short-term fees, limiting the length of time a vehicle can park, and designating on-street spaces for preferential parking for electric vehicles, carshare vehicles, carpools, vanpools, bikes, public use (events or café “Street Seats”) and freight truck loading/unloading areas.

Off-street parking approaches include providing spaces in designated areas, unbundling parking, preferential parking (for vehicles listed above), shared parking between land uses (for example, movie theater and business center), park-and-ride lots for transit and carpools/vanpools, and parking garages in downtowns and other mixed-use areas that allow surface lots to be developed for other uses.

BENEFITS

- allows more land to be available for development, generating local and state revenue
- reduces costs to governments, businesses, developers and consumers
- fosters public-private partnerships that can result in improved streetscape for retail and visitors
- generates revenues where parking is priced
- reduces air pollution and air toxics

CHALLENGES

- inadequate information for motorists on parking and availability
- inefficient use of existing parking resources
- parking spaces that are inconvenient to nearby residents and businesses
- scarce freight loading and unloading areas
- low parking turnover rate
- lack of sufficient parking
- parking oversupply, ongoing costs and the need to free up parking for customers

How should local communities manage parking by 2035?

PARKING MANAGEMENT AT A GLANCE

	SCENARIO A	SCENARIO B	SCENARIO C
Parking management	<p>Existing locally-adopted development codes remain the same as 2010</p> <p>Large employers offer preferential parking</p> <p>Free parking is available in most areas</p>	<p>Same as Scenario A, plus communities expand the flexibility of development codes and develop parking plans for all downtown and centers served by high capacity transit as assumed in adopted RTP</p> <p>Parking facilities are sized and managed so spaces are frequently occupied, travelers have information on parking and travel options, and some businesses share parking</p> <p>Free and timed parking is available in many areas</p>	<p>Same as Scenario B, plus communities expand the flexibility of development codes to support public-private partnerships in areas served by 10-minute transit service</p> <p>Medium-size employers offer preferential parking</p> <p>Local codes allow for unbundled parking</p> <p>Free and timed parking is available in some areas</p>

SCENARIO



Scenario A

RECENT TRENDS Managing parking

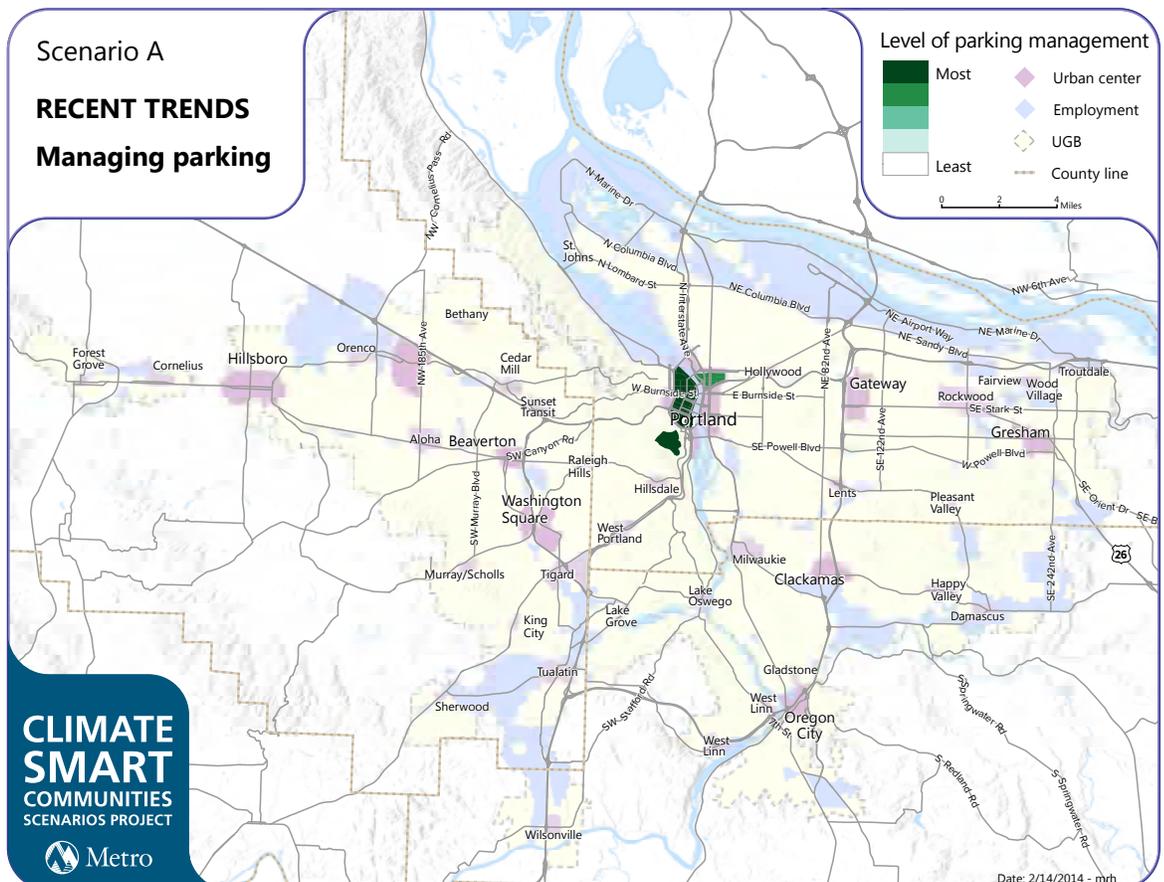
Recent Trends

This scenario shows the results of implementing adopted land use and transportation plans to the extent possible with existing revenue.

13% work trips
8% other trips

Estimated share of trips to areas with actively managed parking

Note These maps are for research purposes only and do not reflect current or future policy decisions of the Metro Council, MPAC or JPACT.



SCENARIO



Adopted Plans

This scenario shows the results of successfully implementing adopted plans and achieving the current Regional Transportation Plan, which relies on increased revenue.

30% work trips
30% other trips
 Estimated share of trips to areas with actively managed parking

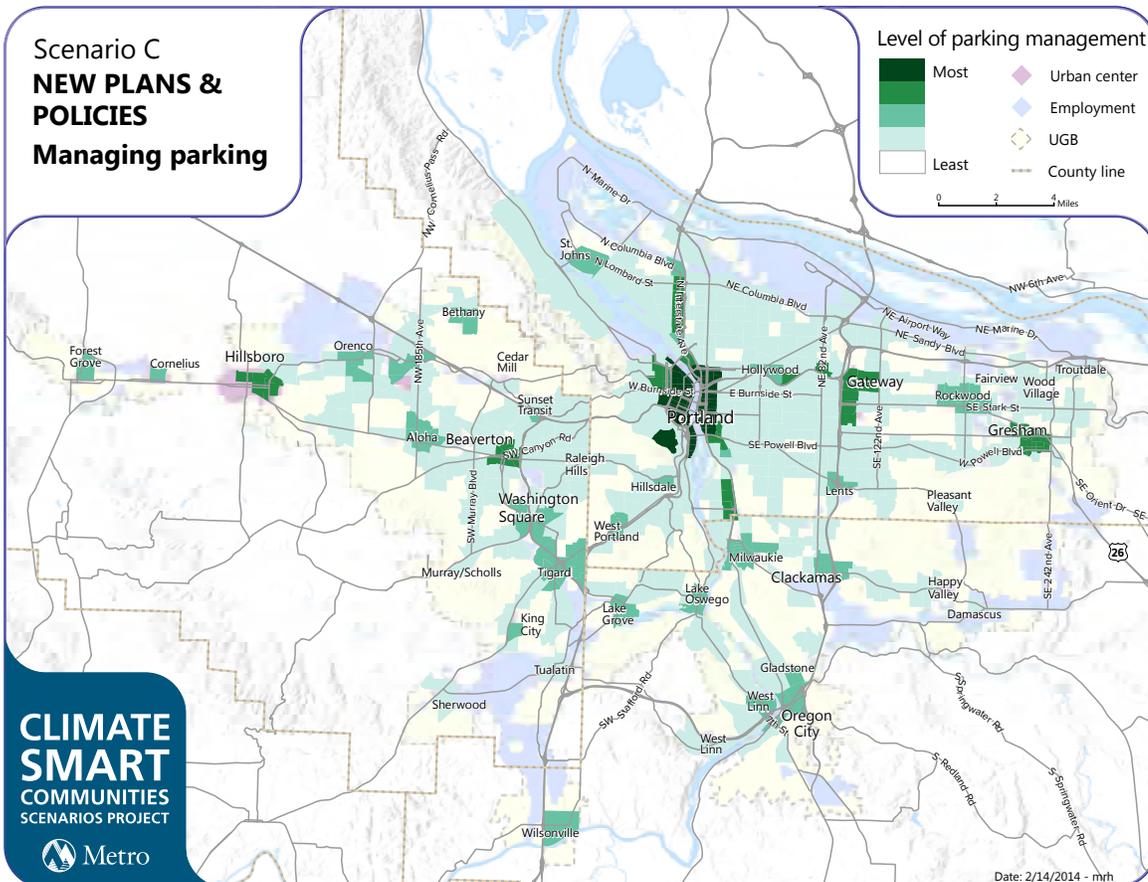
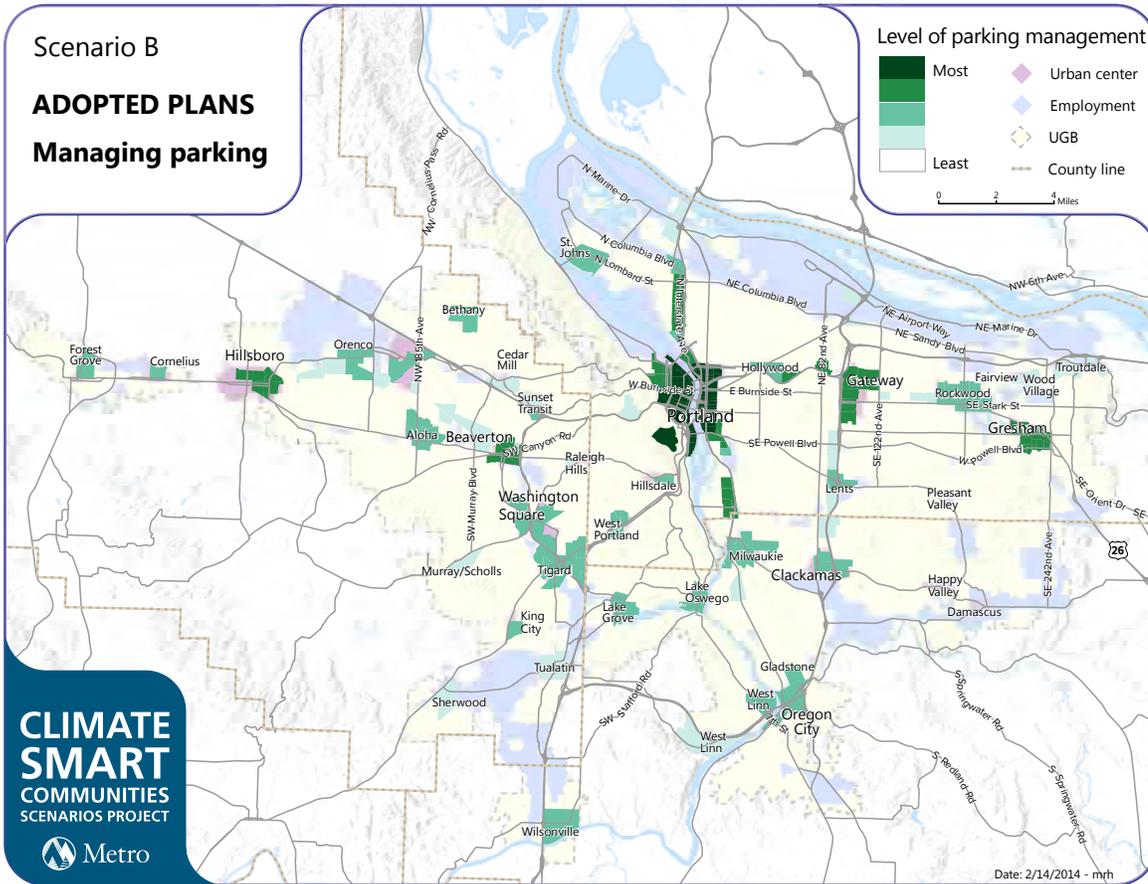
SCENARIO



New Plans and Policies

This scenario shows the results of pursuing new policies, more investment and new revenue sources to more fully achieve adopted and emerging plans.

50% work trips
50% other trips
 Estimated share of trips to areas with actively managed parking



Scenario B
ADOPTED PLANS
Managing parking



Scenario C
NEW PLANS & POLICIES
Managing parking





RELATIVE CLIMATE BENEFIT

N/A

RELATIVE COST

N/A

Identify potential ways to pay for our investment choices

Transportation funding has long been primarily a federal and state responsibility, financed largely through gas taxes and other user fees. However, the purchasing power of federal and state gas tax revenues is declining as individuals drive less and fuel efficiency increases. The effectiveness of this revenue source is further eroded as the gas tax is not indexed to inflation.

Diminished resources mean reduced ability to expand, improve and maintain existing transportation infrastructure. Federal and state funding is not keeping pace with infrastructure operation and maintenance needs, so a substantial share of funding for future RTP investments has shifted to local revenue sources.

Local governments in Oregon have increasingly turned to tax levies, road maintenance fees, system development charges and traffic impact fees in attempt to keep pace, although some communities have been more successful than others. Expansion and operation of the transit system has relied heavily on payroll taxes and competitive federal funding for high capacity transit capital projects. But the region's demand for frequent and reliable transit service exceeds the capacity of the payroll tax to support it.

The adopted Regional Transportation Plan calls for stabilizing existing transportation revenue sources while securing new and innovative long-term sources of funding adequate to build, operate and maintain the regional transportation system for all modes of travel.

BENEFITS

- transforms community visions into reality
- improves access to jobs, goods and services, boosting business revenues
- creates jobs and stimulates development, boosting the regional economy
- reduces delay, saving businesses time and money
- reduces air pollution and air toxics
- reduces risk of traffic fatalities and injuries

CHALLENGES

- declining purchasing power of existing funding sources due to inflation and improvement in fuel efficiency
- potential disproportionate impact of higher taxes and fees on drivers with limited travel options
- limited public support for higher fees and taxes
- patchwork of funding sources
- statutory or constitutional limitations on how different funding sources can be raised or used

How should we pay for our investment choices by 2035?

FUNDING MECHANISMS AT A GLANCE

	SCENARIO  Recent Trends	SCENARIO  Adopted Plans	SCENARIO  New Plans and Policies
Overview of revenue sources	Revenues from existing sources at 2012 levels	Same as Scenario A, plus additional federal, state and local revenues as assumed in the financially constrained RTP	Same as Scenario B, plus additional federal, state and local revenues assumed in the full RTP, plus new user-based fees
Gas tax	<p>Federal and state gas taxes are 18 cents and 30 cents per gallon, respectively</p> <p>Multnomah and Washington counties levy a per gallon gas tax and share revenue with the cities within their boundaries¹</p> <p>Four cities – Tigard, Milwaukie, Happy Valley and Cornelius – implement a gas tax that is predominately used for maintenance¹</p>	Same as Scenario A, plus the state gas tax increases by \$0.01 per year to cover growing operations, maintenance and preservation (OMP) costs at the state, regional and local level	Same as Scenario A, but state gas tax is replaced by a fee based on miles driven
Mileage-based road use fee	None	None	\$0.03 per mile (the equivalent of the Scenario B state gas tax assumption)
Carbon fee	None	None	\$50 per ton
Potential revenues generated (2014\$) from gas tax, road use fee and carbon fee	\$5.6 billion	\$6.5 billion	\$15.2 billion
Other potential revenues from RTP sources (capital only)	Existing federal, state and local revenues at 2012 levels	\$15 billion Scenario A, plus additional federal, state and local revenues at financially constrained RTP levels	\$22 billion Scenario B, plus additional federal, state and local revenues at full RTP levels

¹Not accounted for in potential revenues generated, but included in the Regional Transportation Plan financial assumptions for local road-related operations, maintenance and preservation.

FUNDING MECHANISMS ASSUMED IN 2014 REGIONAL TRANSPORTATION PLAN AND POTENTIAL NEW FUNDING MECHANISMS FOR CONSIDERATION

EXISTING FUNDING MECHANISM	SOURCE		
	Federal	State	Local
Federal Highway Trust Fund ¹	●		
Federal Transit Fund	●		
Gas tax	●	●	●
Vehicle fees (e.g. registration, licensing fees)		●	●
Heavy truck weight-mile fee		●	
Local portion of State Highway Trust Fund ²			●
Development-based fees ³			●
Payroll tax			●
Transit passenger fares			●
Special funds and levies ⁴			●
Tolls (I-5 Columbia River Crossing)		●	
POTENTIAL NEW FUNDING MECHANISM			
Carbon fee	●	●	
Mileage-based road user fee	●	●	

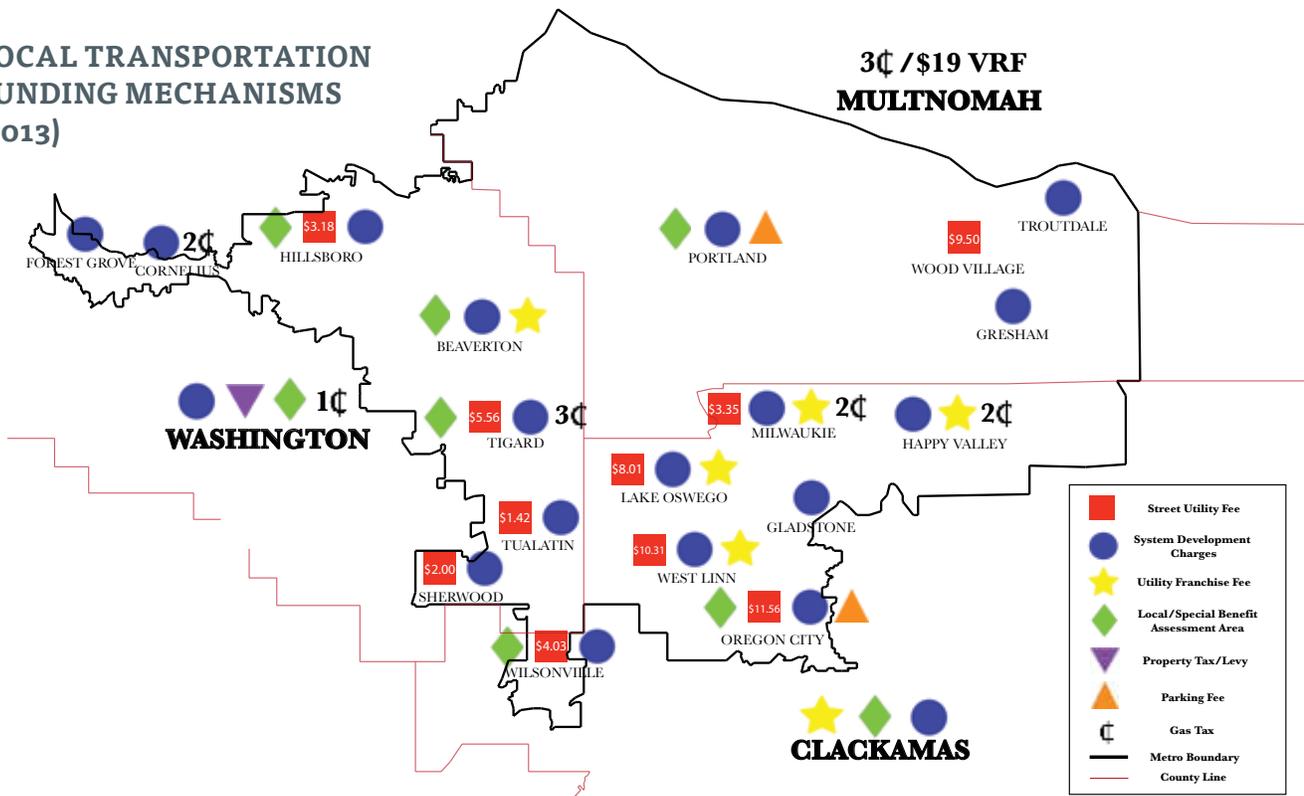
¹The Federal Highway Trust Fund includes federal gas tax receipts and other revenue.

²The State Highway Trust Fund includes state gas tax receipts, vehicle fees and heavy truck weight-mile fees.

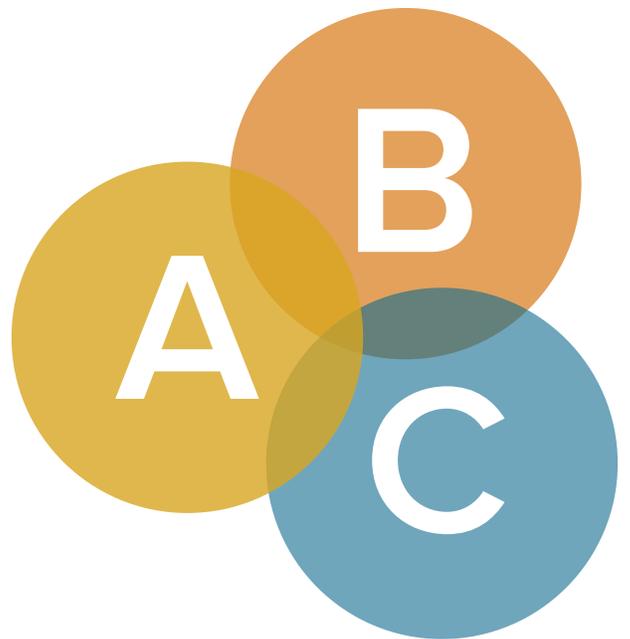
³Development-based fees include system development charges, traffic impact fees, urban renewal districts and developer contributions.

⁴Special funds and levies include tax levies (e.g. Washington County MSTIP), local improvement districts, vehicle parking fees, transportation utility fees and maintenance districts (e.g. Washington County Urban Road Maintenance District).

LOCAL TRANSPORTATION FUNDING MECHANISMS (2013)



SUPPLEMENTAL INFORMATION



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PHASE 2: SELECTED RESULTS AT A GLANCE

The scenarios tested are for research purposes only and do not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

WHAT WE LEARNED ABOUT TRAVEL AND MOBILITY



DAILY VEHICLE MILES TRAVELED

PER PERSON



TIME SPENT IN TRAFFIC

% OF LIGHT VEHICLE TRAVEL TIME SPENT IN TRAFFIC



Discussion points:

- Adopted plans help reduce how far people drive and time spent in traffic.
- Adopted plans provide opportunities for more people living and working in centers and corridors; a more connected road system; using technology such as traffic signal timing; clearing incidents more quickly; more transit and walking and biking all help the transportation system operate more efficiently which in turn helps save time spent in traffic.
- Adopted plans reduce the amount of time spent in traffic by 20 percent over recent trends.
- Reduced delay is expected to support goods movement, job creation and the region's economy.

Discussion points:

- All scenarios improve health outcomes by improving air quality and increasing physical activity.
- Improving air quality and increasing the number of people who regularly exercise by choosing to bike and walk to community destinations can reduce chronic diseases and premature deaths, and lower health care costs.
- Adopted plans increase the level of physical activity over recent trends, saving nearly 90 lives annually by 2035.
- Adopted plans reduce air pollutants by at least 10 metric tons per day over recent trends; an important health benefit of greenhouse gas reduction.
- Reductions in per capita vehicle miles traveled improve traffic safety in all scenarios.
- Further investment can significantly improve these outcomes.

WHAT WE LEARNED ABOUT PUBLIC HEALTH AND SAFETY



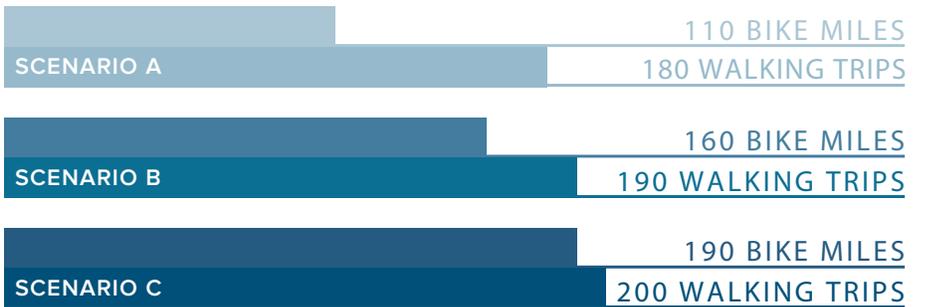
AIR POLLUTANTS

METRIC TONS PER DAY



PHYSICAL ACTIVITY IMPROVES HEALTH

PER PERSON PER YEAR



LESS AIR POLLUTION, MORE PHYSICAL ACTIVITY & IMPROVED SAFETY HELP SAVE LIVES

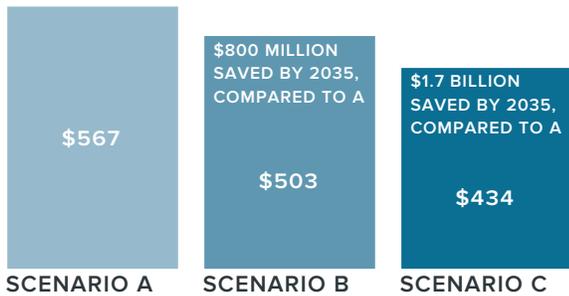
LIVES SAVED EACH YEAR BY 2035



WHAT WE LEARNED ABOUT THE ECONOMY

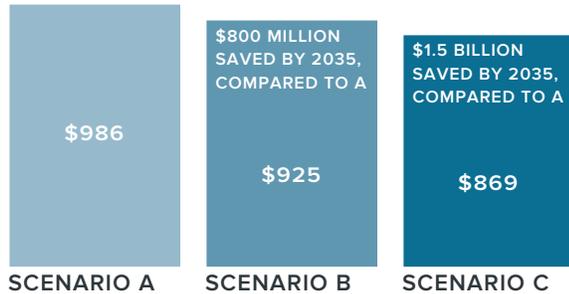
\$ OUR ECONOMY BENEFITS FROM REDUCED EMISSIONS

ANNUAL ENVIRONMENTAL COSTS IN 2035 (MILLIONS, 2005\$)



\$ BUSINESSES AND OUR ECONOMY BENEFIT FROM REDUCED DELAY

ANNUAL FREIGHT TRUCK COSTS DUE TO DELAY IN 2035 (MILLIONS, 2005\$)



Discussion points:

- Adopted plans reduce the environmental costs associated with air pollution, vehicle fluids and severe storms, and flooding and drought expected from climate change.
- Adopted plans reduce the amount of time freight trucks spend in traffic over recent trends.
- Freight truck travel cost savings can be passed on to businesses and consumers.
- Further investment can increase these savings from reduced emissions and delay.

Discussion points:

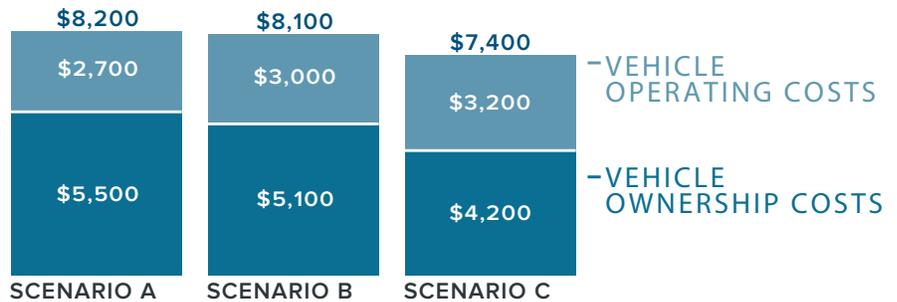
- Adopted plans can reduce the average annual vehicle ownership and operating costs over recent trends.
- Vehicle ownership costs decrease as households drive less and own fewer vehicles.
- Scenario C results in the lowest vehicle costs, which helps reduce the share of household income spent on vehicle travel for all households, including households with limited incomes.

WHAT WE LEARNED ABOUT HOUSEHOLD COSTS



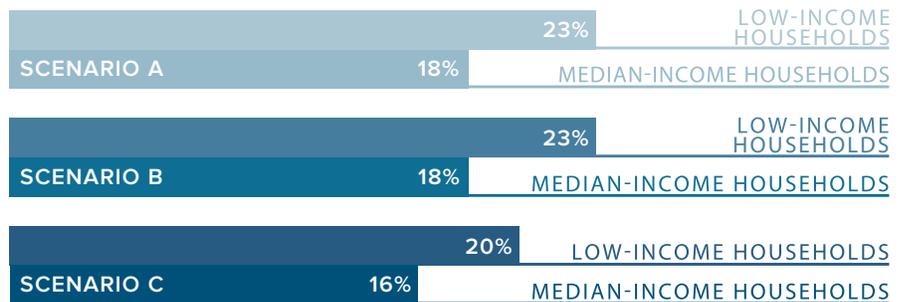
OVERALL VEHICLE-RELATED TRAVEL COSTS DECREASE DUE TO LOWER OWNERSHIP COSTS

AVERAGE ANNUAL HOUSEHOLD VEHICLE OWNERSHIP & OPERATING COSTS



LOWER VEHICLE COSTS HELP HOUSEHOLD BUDGETS

SHARE OF ANNUAL HOUSEHOLD INCOME SPENT ON VEHICLE TRAVEL



PHASE 2: TRANSIT ACCESS AT A GLANCE

HOUSEHOLD ACCESS TO TRANSIT AT A GLANCE

Share of total households within ¼-mile of transit

SERVICE FREQUENCY	SCENARIO A		SCENARIO B		SCENARIO C	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
Every 10 minutes	24%	4%	27%	4%	32%	20%
11 - 15 minute service	20%	29%	21%	32%	17%	18%
16 - 25 minute service	9%	5%	8%	4%	9%	7%
More than 26 minute service	18%	28%	17%	28%	16%	26%
No fixed-route service	29%	34%	27%	32%	26%	29%

LOW-INCOME HOUSEHOLD ACCESS TO TRANSIT AT A GLANCE

Share of low-income households* within ¼-mile of transit

SERVICE FREQUENCY	SCENARIO A		SCENARIO B		SCENARIO C	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
Every 10 minutes	31%	5%	34%	5%	40%	26%
11 - 15 minute service	26%	39%	26%	42%	22%	23%
16 - 25 minute service	8%	6%	7%	5%	7%	7%
More than 26 minute service	16%	28%	15%	27%	14%	24%
No fixed-route service	19%	22%	18%	21%	17%	20%

* \$24,999 per year or less

JOB ACCESS TO TRANSIT AT A GLANCE

Share of jobs within ¼-mile of transit

SERVICE FREQUENCY	SCENARIO A		SCENARIO B		SCENARIO C	
	Rush hour	Daytime & evening	Rush hour	Daytime & evening	Rush hour	Daytime & evening
Every 10 minutes	31%	6%	33%	6%	42%	23%
11 - 15 minute service	19%	35%	22%	38%	17%	25%
16 - 25 minute service	12%	4%	9%	3%	9%	7%
More than 26 minute service	22%	33%	20%	32%	17%	26%
No fixed-route service	16%	22%	16%	21%	15%	19%

PHASE 2: ASSUMPTIONS AT A GLANCE

March 30, 2014

Phase 2: 2010 base year and alternative scenario inputs

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

		2010	2035		
		Base Year Reflects existing conditions	Scenario A Recent trends	Scenario B Adopted plans	Scenario C New plans and policies
Strategy	Households in mixed use areas (percent)	26%	36%	37%	37%
	Urban growth boundary expansion (acres)	2010 UGB	28,000 acres	12,000 acres	12,000 acres
	Drive alone trips under 10 miles that shift to bike (percent)	9%	10%	15%	20%
	Transit service (daily revenue hours)	4,900	5,600	6,200 (RTP Financially Constrained)	11,200 (RTP State + more transit)
	Work/non-work trips in areas with parking management (percent)	13% / 8%	13% / 8%	30% / 30%	50% / 50%
Pricing	Pay-as-you-drive insurance (percent of households participating)	0%	20%	40%	100%
	Gas tax (cost per gallon 2005\$)	\$0.42	\$0.48	\$0.73	\$0.18
	Road user fee (cost per mile)	\$0	\$0	\$0	\$0.03
	Carbon emissions fee (cost per ton)	\$0	\$0	\$0	\$50

March 30, 2014

The inputs are for research purposes only and do not represent current or future policy decisions of the Metro Council.

		2010	2035		
		Base Year Reflects existing conditions	Scenario A Recent trends	Scenario B Adopted plans	Scenario C New plans and policies
Strategy					
Marketing and incentives	Households participating in eco-driving (percent)	0%	0%	30%	60%
	Households participating in individualized marketing programs (percent)	9%	30%	30%	60%
	Workers participating in employer-based commuter programs (percent)	20%	20%	20%	40%
	Carsharing in high density areas (participation rate)	One carshare per 5000 vehicles	Twice the number of carshare vehicles available	Same as Scenario A	Four times the number of carshare vehicles available
	Carsharing in medium density areas (participation rate)	One carshare per 5000 vehicles	Same as today	Twice the number of carshare vehicles	Same as Scenario B
Roads	Freeway and arterial expansion (lane miles added)	N/A	9 miles	81 miles (RTP Financially Constrained)	105 miles (RTP State)
	Delay reduced by traffic management strategies (percent)	10%	10%	20%	35%
Fleet	Fleet mix (percent)	auto: 57% light truck: 43%	auto: 71% light truck: 29%		
	Fleet turnover rate	10 years	8 years		
Technology	Fuel economy (miles per gallon)	auto: 29.2 mpg light truck: 20.9 mpg	auto: 68.5 mpg light truck: 47.7 mpg		
	Carbon intensity of fuels	90 g CO ₂ e/megajoule	72 g CO ₂ e/megajoule		
	Plug-in hybrid electric/all electric vehicles (percent)	auto: 0% / 1% light truck: 0% / 1%	auto: 8% / 26% light truck: 2% / 26%		

GLOSSARY

Carsharing A model similar to a car rental where a member user rents cars for short periods of time, often by the hour. Such programs are attractive to customers who make only occasional use of a vehicle, as well as others who would like occasional access to a vehicle of a different type than they use day-to-day. The organization renting the cars may be a commercial business or the users may be organized as a company, public agency, cooperative, or peer-to-peer. Zipcar and car2go are local examples.

Eco-driving A combination of public education, in-vehicle technology and driving practices that result in more efficient vehicle operation and reduced fuel consumption and emissions. Examples of eco-driving practices include avoiding rapid starts and stops, matching driving speeds to synchronized traffic signals, and avoiding idling. Program are targeted to those without travel options and traveling longer distances.

Employer-based commute programs Work-based travel demand management programs that can include transportation coordinators, employer-subsidized transit pass programs, ride-matching, carpool and vanpool programs, telecommuting, compressed or flexible work weeks and bicycle parking and showers for bicycle commuters.

Fleet mix The percentage of vehicles classified as automobiles compared to the percentage classified as light trucks (weighing less than 10,000 lbs.); light trucks make up 43 percent of the light-duty fleet today.

Fleet turnover The rate of vehicle replacement or the turnover of older vehicles to newer vehicles; the current turnover rate in Oregon is 10 years.

Greenhouse gas emissions According to the Environmental Protection Agency, gases that trap heat in the atmosphere are called greenhouse gases emissions. Greenhouse gases that are created and emitted through human activities include carbon dioxide (emitted through the burning of fossil fuels), methane, nitrous oxide and fluorinated gases. For more information see www.epa.gov/climatechange.

GreenSTEP GreenSTEP is a new model developed to estimate GHG emissions at the individual household level. It estimates greenhouse gas emissions associated with vehicle ownership, vehicle travel, and fuel consumption, and is designed to operate in a way that allows it to show the potential effects of different policies and other factors on vehicle travel and emissions. Metropolitan GreenSTEP travel behavior estimates are made irrespective of housing choice or supply; the model only considers the demand forecast components – household size, income and age – and the policy areas considered in this analysis.

House Bill 2001 (Oregon Jobs and Transportation Act) Passed by the Legislature in 2009, this legislation provided specific directions to the Portland metropolitan area to undertake scenario planning and develop two or more land use and transportation scenarios by 2012 that accommodate planned population and employment growth while achieving the GHG emissions reduction targets approved by LCDC in May 2011. Metro, after public review and consultation with local governments, is to adopt a preferred scenario. Following adoption of a preferred scenario, the local governments within the Metro jurisdiction are to amend their comprehensive plans and land use regulations as necessary to be consistent with the preferred scenario. For more information go to: http://www.oregonlegislature.gov/bills_laws/lawsstatutes/2009orLaw0865.html

Individualized marketing Travel demand management programs focused on individual households. IM programs involve individualized outreach to households that identify household travel needs and ways to meet those needs with less vehicle travel.

Light vehicles Vehicles weighing 10,000 pounds or less, and include cars, light trucks, sport utility vehicles, motorcycles and small delivery trucks.

Low Carbon Fuel Standard In 2009, the Oregon legislature authorized the Environmental Quality Commission to develop low carbon fuel standards (LCFS) for Oregon. Each type of transportation fuel (gasoline, diesel, natural gas, etc.) contains carbon in various amounts. When the fuel is burned, that carbon turns into carbon dioxide (CO₂), which is a greenhouse gas. The goal is to reduce the average carbon intensity of Oregon's transportation fuels by 10 percent below 2010 levels by 2022 and applies to the entire mix of fuel available in Oregon. Carbon intensity refers to the emissions per unit of fuel; it is not a cap on total emissions or a limit on the amount of fuel that can be burned. The lower the carbon content of a fuel, the fewer greenhouse gas emissions it produces.

Pay-as-you-drive insurance (PAYD) This pricing strategy converts a portion of liability and collision insurance from dollars-per-year to cents-per-mile to charge insurance premiums based on the total amount of miles driven per vehicle on an annual basis and other important rating factors, such as the driver's safety record. If a vehicle is driven more, the crash risk consequently increases. PAYD insurance charges policyholders according to their crash risk.

Oregon Sustainable Transportation Initiative (OSTI) An integrated statewide effort to reduce GHG emissions from the transportation sector by integrating land use and transportation. Guided by stakeholder input, the initiative has built collaborative partnerships among local governments and the state's six Metropolitan Planning Organizations to help meet Oregon's goals to reduce GHG emissions. The effort includes five main areas: Statewide Transportation Strategy development, GHG emission reduction targets for metropolitan areas, land use and transportation scenario planning guidelines, tools that support MPOs and local governments and public outreach. For more information, go to www.oregon.gov/odot/td/osti

Scenario A term used to describe a possible future, representing a hypothetical set of strategies or sequence of events.

Scenario planning A process that tests different actions and policies to see their affect on GHG emissions reduction and other quality of life indicators.

Statewide Transportation Strategy The strategy, as part of OSTI, will define a vision for Oregon to reduce its GHG emissions from transportation systems, vehicle and fuel technologies and urban form by 2050. Upon completion, the strategy will be adopted by the Oregon Transportation Commission. For more information go to: <http://www.oregon.gov/ODOT/TD/OSTI/STS.shtml>.

System efficiency Strategies that optimize the use of the existing transportation system, including traffic management, employer-based commute programs, individualized marketing and carsharing.

Traffic incident management A coordinated process to detect, respond to, and remove traffic incidents from the roadway as safely and quickly as possible, reducing non-recurring roadway congestion.

Traffic management Strategies that improve transportation system operations and efficiency, including ramp metering, active traffic management, traffic signal coordination and real-time traveler information regarding traffic conditions, incidents, delays, travel times, alternate routes, weather conditions, construction, or special events.

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This report contains information that is intended for research purposes only and does not necessarily reflect current or future policy decisions of the Metro Council, MPAC or JPACT.

The preparation of this report was financed in part by the Oregon Department of Transportation, U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration. The opinions, findings and conclusions expressed in this report are not necessarily those of the Oregon Department of Transportation, U.S. Department of Transportation, Federal Highway Administration or Federal Transit Administration.

Clean air and clean water do not stop at city limits or county lines. Neither does the need for jobs, a thriving economy and good transportation choices for people and businesses in our region. Voters have asked Metro to help with the challenges that cross those lines and affect the 25 cities and three counties in the Portland metropolitan area.

A regional approach simply makes sense when it comes to protecting open space, caring for parks, planning for the best use of land, managing garbage disposal and increasing recycling. Metro oversees world-class facilities such as the Oregon Zoo, which contributes to conservation and education, and the Oregon Convention Center, which benefits the region's economy.

Metro Council President

Tom Hughes

Metro Council

Shirley Craddick, District 1
Carlotta Collette, District 2
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Kathryn Harrington, District 4
Sam Chase, District 5
Bob Stacey, District 6

Auditor

Suzanne Flynn



Metro

600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1700
503-797-1804 TDD
503-797-1795 fax

For more information, visit
[www.oregonmetro.gov/
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MEMORANDUM

CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos

FROM: Ben Bryant, Economic Development Manager

DATE: 05/12/2014

SUBJECT: Southwest Corridor Draft Recommendation

ISSUE BEFORE THE COUNCIL:

Provide direction to the Southwest Corridor Steering Committee on which transit alignments should not be studied in more detail.

EXECUTIVE SUMMARY:

Background

Last summer, the Tualatin City Council provided direction to the Metro Southwest Corridor Steering Committee to continue studying light-rail transit (LRT) and bus-rapid transit (BRT) between Portland and Tualatin, via Tigard. Since that time, Metro and TriMet have been developing various alignment options in an effort to understand potential benefits, costs, property impacts, and environmental challenges.

Metro Recommendation (Coming May 5th-7th)

Prior to the construction of any alignment, Metro and TriMet need to complete a Draft Environmental Impact Statement (DEIS). The purpose of the DEIS is to determine which alignment is most preferred based on the impacts and benefits. To control the cost of the DEIS process, the Southwest Corridor Steering Committee will be asked to eliminate potential alignments that are not viable.

Currently, Metro is still developing the draft recommendation on which alignments should be eliminated for additional study. On May 5th, Metro will release the draft recommendation. At that time, the recommendation will be added to the Council Packet.

Next Steps

The recommendation will be shared with the following groups in hopes of gathering input:

- May 6 - 23: Metro Online Survey
- May 15: Planning Commission



G R E A T P L A C E S
SW Corridor Plan

Project team leaders recommendation on high capacity transit design options, multimodal projects, and potential station locations to study in a draft environmental impact statement

Discussion draft – May 6, 2014

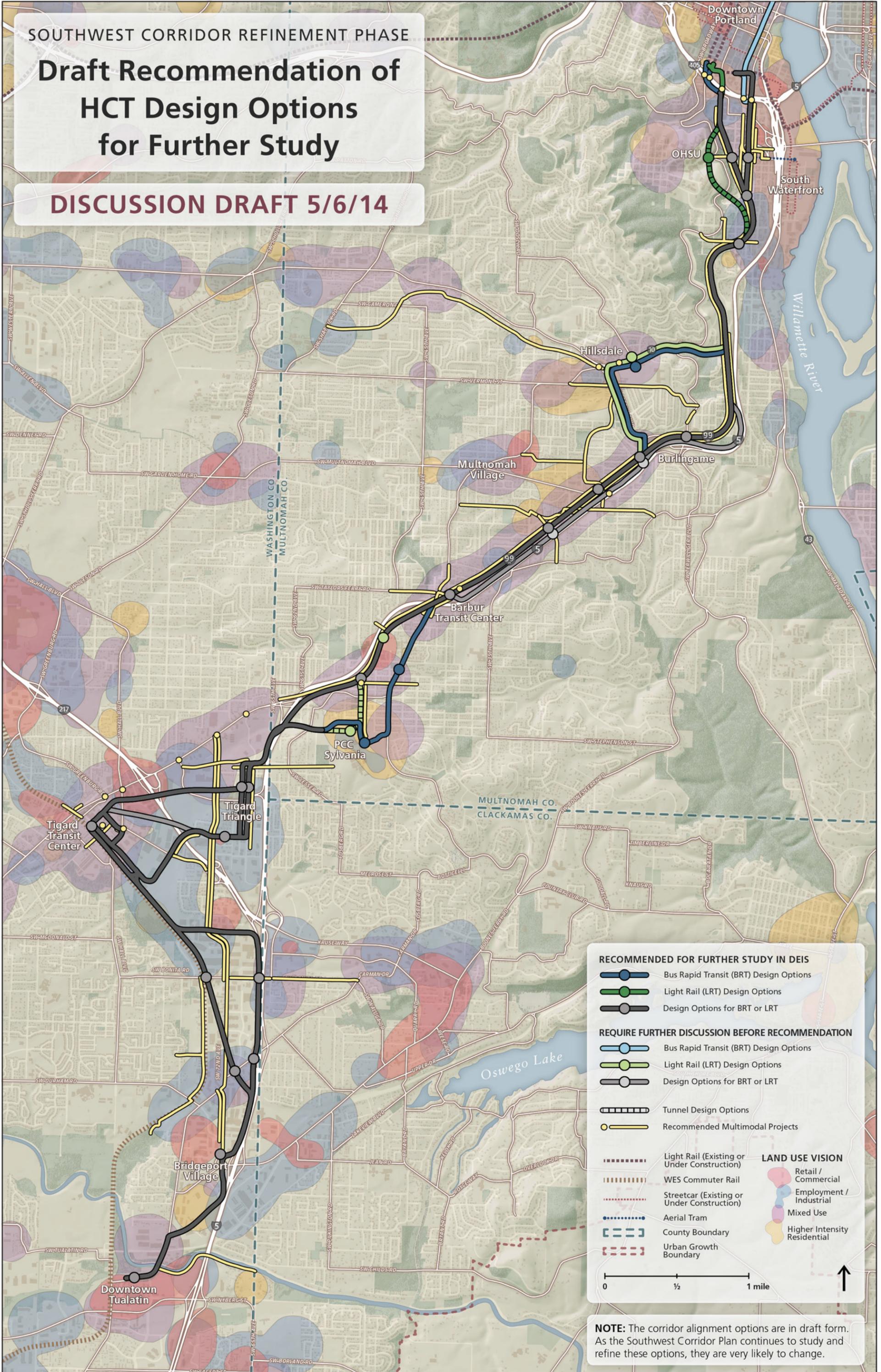
PROJECT PARTNERS

Cities of Beaverton, Durham, King City, Lake Oswego, Portland, Sherwood, Tigard and Tualatin, Multnomah and Washington counties, Oregon Department of Transportation, TriMet and Metro

SOUTHWEST CORRIDOR REFINEMENT PHASE

Draft Recommendation of HCT Design Options for Further Study

DISCUSSION DRAFT 5/6/14



RECOMMENDED FOR FURTHER STUDY IN DEIS

- Bus Rapid Transit (BRT) Design Options
- Light Rail (LRT) Design Options
- Design Options for BRT or LRT

REQUIRE FURTHER DISCUSSION BEFORE RECOMMENDATION

- Bus Rapid Transit (BRT) Design Options
- Light Rail (LRT) Design Options
- Design Options for BRT or LRT
- Tunnel Design Options
- Recommended Multimodal Projects

LAND USE VISION

- Retail / Commercial
- Employment / Industrial
- Mixed Use
- Higher Intensity Residential

Legend for existing infrastructure and boundaries:

- Light Rail (Existing or Under Construction)
- WES Commuter Rail
- Streetcar (Existing or Under Construction)
- Aerial Tram
- County Boundary
- Urban Growth Boundary

Scale: 0, 1/2, 1 mile. North arrow.

NOTE: The corridor alignment options are in draft form. As the Southwest Corridor Plan continues to study and refine these options, they are very likely to change.

Recommendation Summary

The PTL assessed nearly 60 HCT design options in nine separate geographic segments throughout the corridor for consideration for further study in the Draft Environmental Impact Statement (DEIS). Through preliminary design, options were analyzed based on the following categories:

- **capital cost magnitudes** – relative cost of construction including design elements such as tunnels, structure, length, and built environment;
- **impacts to the natural environment** – impacts to natural resources including trees, parks, watersheds, including considerations of potential opportunities for improvements;
- **development/redevelopment potential** – potential to support the Southwest Corridor land use vision;
- **property impacts** - effects on buildings and private property;
- **traffic/bike/pedestrian performance** – effects on roadway operations, bikeways, and sidewalks;
- **transit performance** – assessment of ridership potential and operating costs based on design characteristics such as distance and speed, and household and employment access.

The PTL considered the technical assessment findings along with public comments and discussions during design meetings conducted with partner jurisdictions. The resulting PTL draft recommendation proposes advancement to the DEIS of 15 design options for BRT and 13 options for LRT across the

nine geographic segments. It also identifies an additional six options for BRT and six options for LRT that did not receive a consensus decision among the PTL and require further discussion. For some of these options, additional information in the next few weeks may result in a change in recommendation status; for others, the Steering Committee may be asked to make a final decision without a PTL recommendation. The table below lists the HCT design options recommended for further study and those identified as requiring more discussion.

Multimodal projects included in the recommendation were chosen based on their support for the recommended HCT options or for the SW Corridor land use vision. For some projects, only portions of the originally proposed are recommended for continued study in the DEIS.

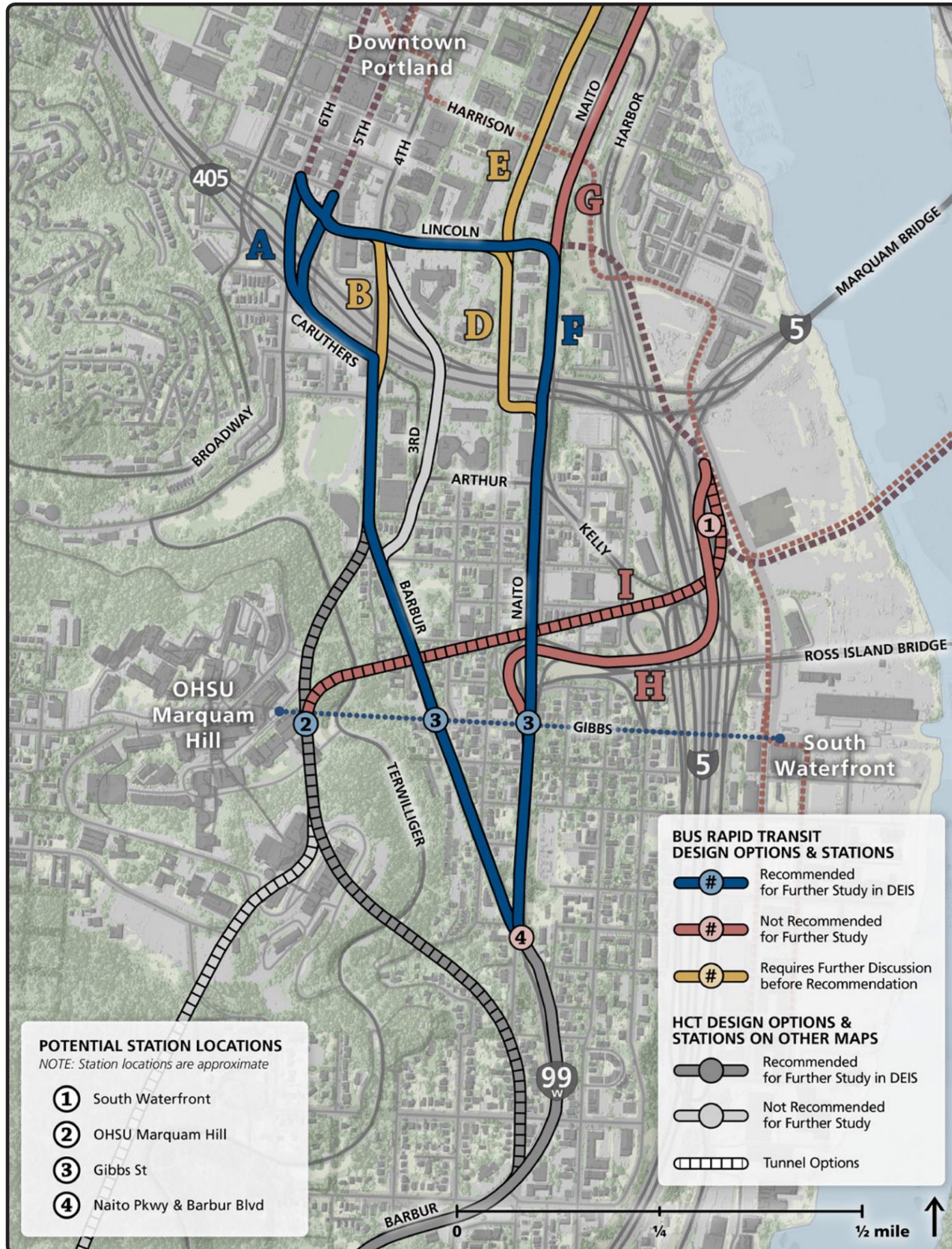
Stations identified the design process were analyzed to help inform which station areas would best serve and activate the key places along the corridor. The analysis also helped to recommend policies and investments needed to activate the desired local land uses in each station area location.

The HCT options, multimodal projects, and stations recommended for further study or for more discussion are shown on the map on the reverse side of this page.

HCT Options Recommended for DEIS or Requiring Further Discussion	BRT		LRT	
	Recommended	Further discussion required	Recommended	Further discussion required
Option				
1. Tie-In to Existing Transit				
Barbur via Fifth/Sixth Ave Couplet (with OHSU elevator)				
Barbur via Fourth Ave (with OHSU elevator)				
Naito to Transit Mall (with OHSU elevator)				
Naito to Transit Mall via First Ave (with OHSU elevator)				
Naito to First Ave - extended downtown (with OHSU elevator)				
2. South Portland to Barbur Transit Center				
Barbur Boulevard				
Barbur - Hillsdale Loop using Capitol Hwy & Bertha				
Short Tunnel - exit at Hamilton				
Adjacent to I-5				
3. PCC Area				
PCC Campus via Capitol Hwy (uses either I-5 crossing)				
Barbur - Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)				
Short Tunnel via Barbur (uses new bridge I-5 crossing)				
New Bridge (option for campus BRT routes)				
4. Tigard Triangle				
68th/69th Couplet				
5. OR-217 Crossing				
Clinton to Tigard Transit Center				
Beveland South				
Beveland North				
6. Downtown Tigard				
Commercial Street to Tigard Transit Center (no loop)				
Commercial Street with Downtown Loop via Hall				
7. Tigard to Durham				
WES Alignment to Parallel I-5 via Tech Center Drive				
WES Alignment to Parallel I-5 vi PWNR Freight Rail ROW				
8. Bridgeport Village				
Lower Boones Ferry (from Durham Rd, 72nd or parallel to I-5)				
9. Tualatin				
Parallel to Boones Ferry (north side of downtown)				

1. Tie-In to Existing Transit

1. Tie-In to Existing Transit: BRT Design Options



Design Options

The design options recommended for further study would have two distinctly different goals: Barbur via a 5th/6th Avenue couplet would provide the fastest connection to the transit mall, while the Naito option would support redevelopment of the South Portland neighborhood. All Barbur and Naito options would include an elevator serving Marquam Hill/OHSU from the vicinity of SW Barbur and SW Gibbs Street. Naito options would be incompatible with OHSU tunnel options.

Recommended for further study because:

- A. Barbur via 5th/6th Avenue Couplet** would:
 - Provide the fastest connection to CBD and transit mall;
 - Provide the least expensive BRT connection.
- F. Naito to Transit Mall** would:
 - Have potential to include a redesign of the Ross Island Bridgehead, including a redesign of Naito to change its character from a 1940's-era expressway to neighborhood-scale boulevard;
 - Cost \$34/\$54M more than Barbur via 5th/6th, excluding Ross Island Bridgehead project.

Further discussion required because:

- B. Barbur via 4th Avenue** would:
 - Be similar to 5th/6th couplet option, but with less direct connection to transit mall.
- D. Naito to Transit Mall via SW 1st Avenue** would:
 - Include a redesign of Naito;
 - Have potential to include a redesign of the Ross Island Bridgehead;
 - Avoid some traffic by leaving Naito (but not with Ross Island Bridgehead project).
- E. Naito to SW 1st Ave - extended downtown** would:
 - Avoid SW Lincoln Street and portions of the transit mall;
 - Support the City of Portland's Central City Plan;
 - Affect traffic operations on SW 1st Avenue, which is currently one-way southbound;
 - Likely require BRT to operate in mixed traffic, resulting in slower travel times and less reliable service.

Not recommended because:

- G. Naito Parkway - extended downtown** would:
 - Likely require BRT to operate in mixed traffic, resulting in slower travel times and less reliable service;
 - Provide fewer and less convenient transfer opportunities compared to options on the transit mall.
- H. South Waterfront - bridge/tunnel to Naito** and **I. South Waterfront - tunnel to OHSU** would:
 - Provide an indirect connection between the transit mall and the corridor;
 - Require significant structure (bridges and/or tunnels) at high costs relative to other options;
 - Cause significant construction impacts near OHSU's Collaborative Life Sciences Building, streetcar, and Portland-Milwaukie LRT.

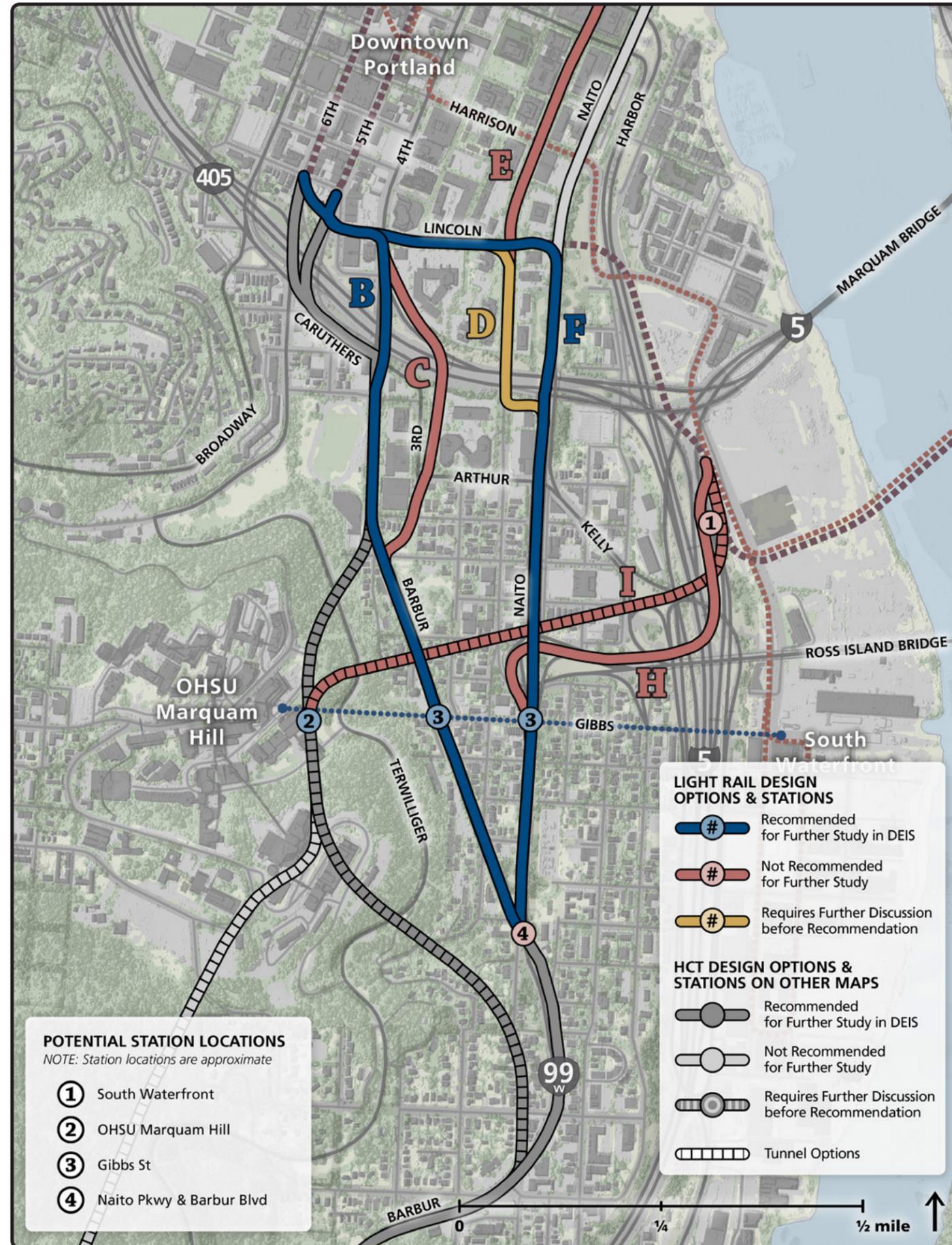
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
1. Tie-In to Existing Transit								
A	Barbur via Fifth/Sixth Ave Couplet (with OHSU elevator)	●	●	●	●	●	●	●
B	Barbur via Fourth Ave (with OHSU elevator)	●	●	●	●	●	●	●
D	Naito via First Ave (with OHSU elevator)	●	●	●	●	●	●	●
F	Naito (with OHSU elevator)	●	●	●	●	●	●	●
E	Naito to First Ave - extended downtown (with OHSU elevator)	●	●	○	●	●	●	●
G	Naito Parkway - extended downtown (with OHSU elevator)	○	○	●	●	●	●	●
H	South Waterfront - bridge/tunnel to Naito	○	○	●	●	●	●	●
I	South Waterfront - tunnel to OHSU	○	○	●	●	●	●	●

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS Requires Further Discussion before Recommendation

1. Tie-In to Existing Transit: LRT Design Options



Design Options

The design options recommended for further study would have two distinctly different goals: Barbur via SW 4th Avenue would provide the fastest connection to the transit mall, while the Naito option would support redevelopment of the South Portland neighborhood. All Barbur and Naito options would include an elevator serving Marquam Hill/OHSU from the vicinity of SW Barbur and SW Gibbs Street. Naito options would be incompatible with OHSU tunnel options.

Recommended for further study because:

- B. Barbur via 4th Avenue** would:
 - Provide the fastest connection to the CBD and transit mall at the peak load point of the line (the highest ridership location);
 - Provide the least expensive LRT connection;
 - Avoid Ross Island Bridgehead traffic.
- F. Naito to Transit Mall** would:
 - Include a redesign of Naito to change its character to neighborhood-scale boulevard including streetscape improvements, pedestrian/bike facilities, and additional intersections/crossing opportunities;
 - Have potential to include a redesign of the Ross Island Bridgehead to change traffic patterns and convert land for redevelopment.

Further discussion required because:

- D. Naito to Transit mall via SW 1st Avenue** would:
 - Include a redesign of Naito;
 - Have potential to include a redesign of the Ross Island Bridgehead;
 - Avoid traffic on Naito north of Sheridan (but not with Ross Island Bridgehead project, which would increase traffic on SW 1st Avenue).

Not recommended because:

- C. Barbur via 4th Ave/Second Ave** would:
 - Require significant structure and tunneling at a high cost without advantages over other options.
- E. Naito to SW 1st Avenue - extended downtown** would:
 - Affect traffic operations on SW 1st Avenue, which is currently one-way southbound;
 - Cause conflicts with auto traffic in the CBD, especially at the Hawthorne Bridgehead where either LRT or outbound traffic would lose signal priority.
- H. South Waterfront - bridge/tunnel to Naito** and **I. South Waterfront - tunnel to OHSU** would:
 - Provide an indirect connection between the transit mall and the corridor;
 - Require significant structure (bridges and/or tunnels) that would be very expensive;
 - Cause significant construction impacts near OHSU's Collaborative Life Sciences Building and planned Schnitzer campus, streetcar, and Portland-Milwaukie LRT.

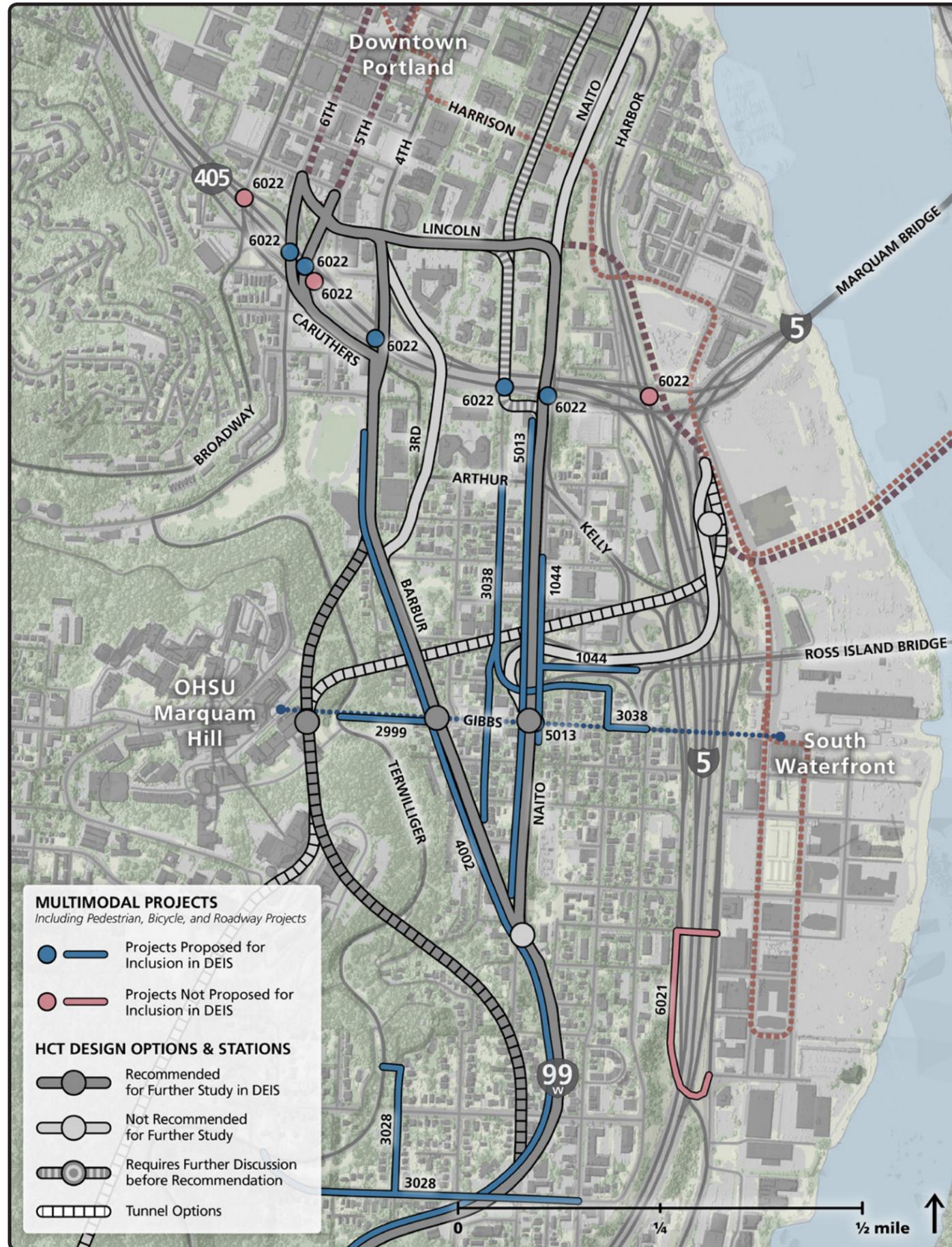
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
1. Tie-In to Existing Transit								
B	Barbur via Fourth Ave (with OHSU elevator)	●	●	●	●	●	●	●
C	Barbur via Fourth Ave/Second Ave (with OHSU elevator)	○	○	○	○	○	○	○
D	Naito via First Ave (with OHSU elevator)	○	○	○	○	○	○	○
E	Naito via First Ave - extended downtown (with OHSU elevator, no connection to transit mall)	○	○	○	○	○	○	○
F	Naito (to transit mall, with OHSU elevator)	●	●	●	●	●	●	●
H	South Waterfront - bridge/tunnel to Naito	○	○	○	○	○	○	○
I	South Waterfront - tunnel to OHSU	○	○	○	○	○	○	○

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts / DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst ○ ○ ○ ○ ○

Proposed for Further Study in DEIS (Blue) / Not Proposed for Further Study in DEIS (Red) / Requires Further Discussion before Recommendation (Yellow)

1. Tie-In to Existing Transit: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas south of downtown. They also include modifications to the Ross Island Bridgehead if Naito is the selected alignment in order to provide people the ability to safely access stations and walk and bike along the corridor without having to contend with high-speed vehicle traffic and expressway ramps. If Naito is not the selected alignment, the recommendation includes one or more pedestrian crossings of Naito to reduce the barrier effect within the neighborhood. One project was outside the immediate walkshed of any potential station area and was not recommended.

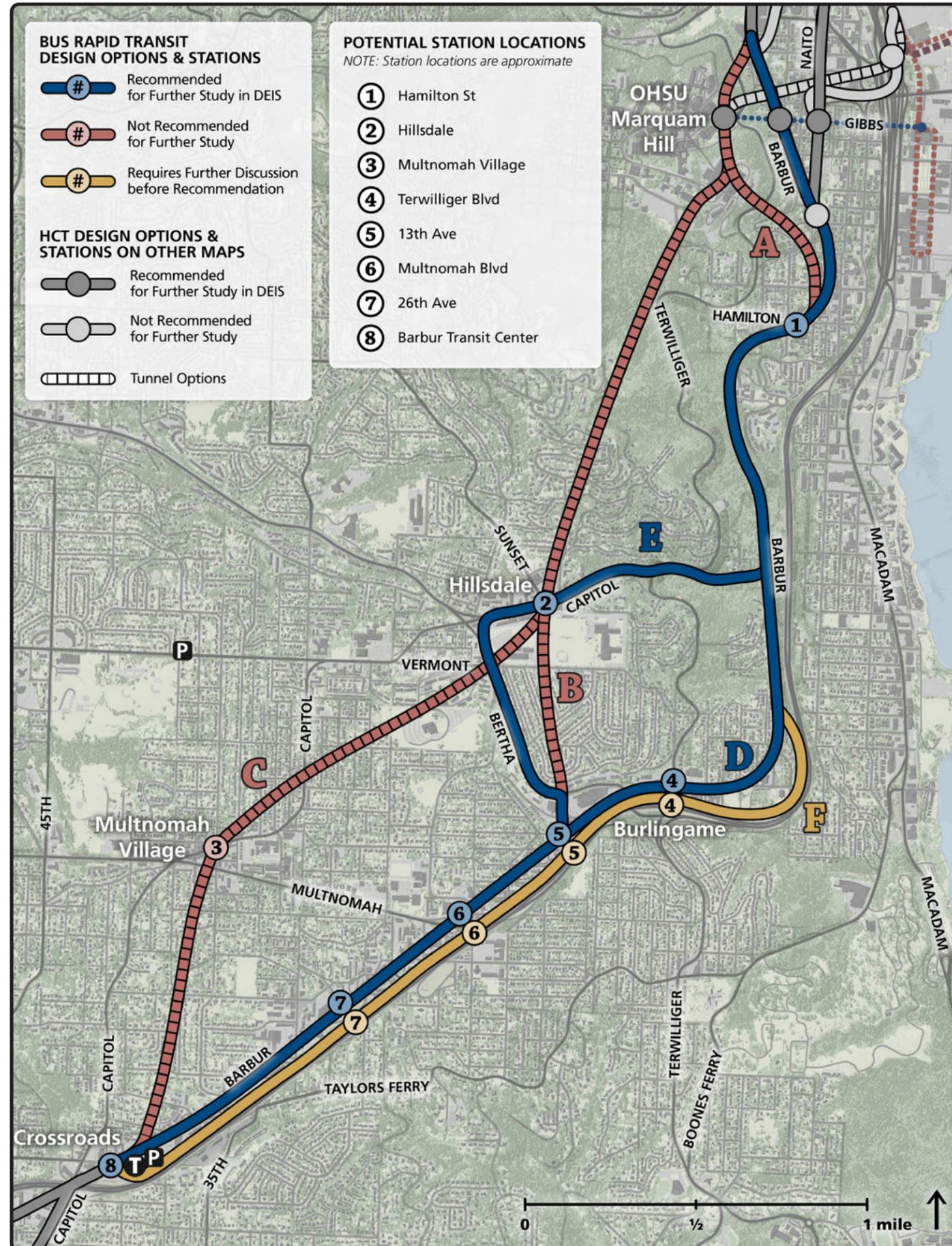
### City/Ownership	Project Title Project Description	Cost Primary Mode	Draft DEIS Recommendation
1044 Portland ODOT	South Portland Circulation and Connectivity (Ross Island Bridge ramp connections) Adds a new ramp connection between I-405 and the Ross Island Bridge from Kelly Avenue. Restore at-grade intersections along Naito Parkway, with new signalized intersections at Ross Island Bridge access and at Hooker Street. Removes several existing roadways and ramp connections.	\$\$\$\$ Auto/ Freight	With Naito alignment: Include
2999 Portland	Pedestrian connection from Barbur to Terwilliger at Gibbs Construct a new pedestrian walkway under the tram within the Gibbs right-of-way through the Terwilliger Parkway. The steep grade and forested area will require lighting and stairs.	\$ Pedestrian	With Barbur/Naito station near Gibbs: Include
3028 Portland	Inner Hamilton bikeway -from SW Terwilliger Blvd to SW Corbett Ave Enhanced shared roadway. Includes connection to Terwilliger on SW Hamilton Terrace	¢ Bicycle	With Barbur/Hamilton station: Include
3038 Portland	Lower SW 1st bikeway -from SW Barbur Blvd to SW Arthur St Multiple bicycle facility types: separated in-roadway (Corbett: Gibbs - Grover); bicycle boulevard (all other segments). Includes connection to SW Kelly Ave on SW Grover St and SW Corbett Ave	¢ Bicycle	With Barbur/Naito station near Gibbs: Include
4002 Portland ODOT	Barbur Blvd, SW (3rd - Terwilliger): Multimodal Improvements Construct Improvements for transit, bikes and pedestrians. Transit improvements include preferential signals, pullouts, shelters, left turn lanes, sidewalks, and crossing improvements.	\$\$ Multimodal	With Barbur alignment: Include
5013 Portland ODOT	Naito/South Portland Improvements (left turn pockets with bike/ped and remove tunnel, ramps and viaduct) Reconstruct Naito Pkwy as two-lane road w/bike lanes, sidewalks, left turn pockets, & on-street parking. Remove grade separation along Naito at Barbur Blvd. (tunnel), the Ross Island Bridge, Arthur/Kelly (viaduct), and the Grover pedestrian bridge.	\$\$\$\$ Multimodal	With Barbur station: Include signalized pedestrian crossing(s) of Naito near station (1%) With Naito alignment: Include
6022 Portland ODOT	I-405 Bike/Ped Crossing Improvements Improve opportunities for bicycles and pedestrians to cross over/under I-405 on Harbor Drive, Naito Parkway, 1st, 4th, 5th, 6th and Broadway	\$ Bike/Ped	All options: Consider opportunity to address with HCT crossing of I-405

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

2. South Portland to Barbur Transit Center

2. South Portland to Barbur Transit Center: BRT Design Options



Design Options

Options in this section prioritize either development potential and accessibility (Barbur, Hillsdale Loop options) or physical separation of HCT from traffic (Adjacent to I-5 option, tunnel options).

Recommended for further study because:

D. Barbur Boulevard would:

- Support the City of Portland's Barbur Concept Plan, which identifies HCT as a necessary component of the vision for Barbur Boulevard;
- Include the addition or improvement of sidewalks, bike facilities, storm water features, and other streetscaping;
- Include replacement of the Newbury and Vermont viaducts, complete with sidewalks and bike lanes.
- Cost significantly less than the tunnel options and an estimated \$44M/\$70M (2014\$/2023\$ with finance costs) less than the Hillsdale loop option.

E. Barbur – Hillsdale loop using Capitol Hwy & Bertha would:

- Provide HCT service to Hillsdale without a tunnel and without bypassing significant numbers of households or employment where the alignment would deviate from SW Barbur Boulevard;
- Potentially include addition of new pedestrian/bicycle structure parallel to the Newbury and Vermont viaducts (not a complete replacement) despite the alignment bypassing them.

Further discussion required because:

F. Adjacent to I-5 would:

- Avoid key intersections and business accesses along SW Barbur Boulevard;
- Require significant structure on steep slopes to avoid Barbur Boulevard and ramps;
- Cost significantly more than the Barbur option;
- Provide more limited support for the Barbur Concept Plan;
- Result in more difficult pedestrian connections to stations;
- Not include pedestrian and bike improvements to Barbur Boulevard or along the BRT alignment.

Not recommended because:

A. Short Tunnel – exit at Hamilton would:

- Be very expensive and compromise the lower cost advantage of the BRT mode over LRT;
- Result in severe construction impacts.

B. Medium Tunnel – exit at Bertha would:

- Be very expensive;
- Result in severe construction impacts.

C. Long Tunnel – exit at Barbur Transit Center would:

- Be very expensive;
- Result in severe construction impacts;
- Not support the Barbur Concept Plan as HCT would bypass the historic section of the boulevard.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
2. South Portland to Barbur Transit Center								
A	Short Tunnel - exit at Hamilton	○	●	●	●	●	●	●
B	Medium Tunnel - exit at Bertha	○	●	○	●	●	●	●
C	Long Tunnel - exit at Barbur Transit Center	○	●	○	●	○	●	●
D	Barbur - South Portland to Crossroads	●	●	●	●	●	●	○
E	Barbur - Hillsdale loop using Capitol Hwy & Bertha	●	○	●	○	●	●	○
F	Adjacent to I-5	●	●	○	○	●	●	●

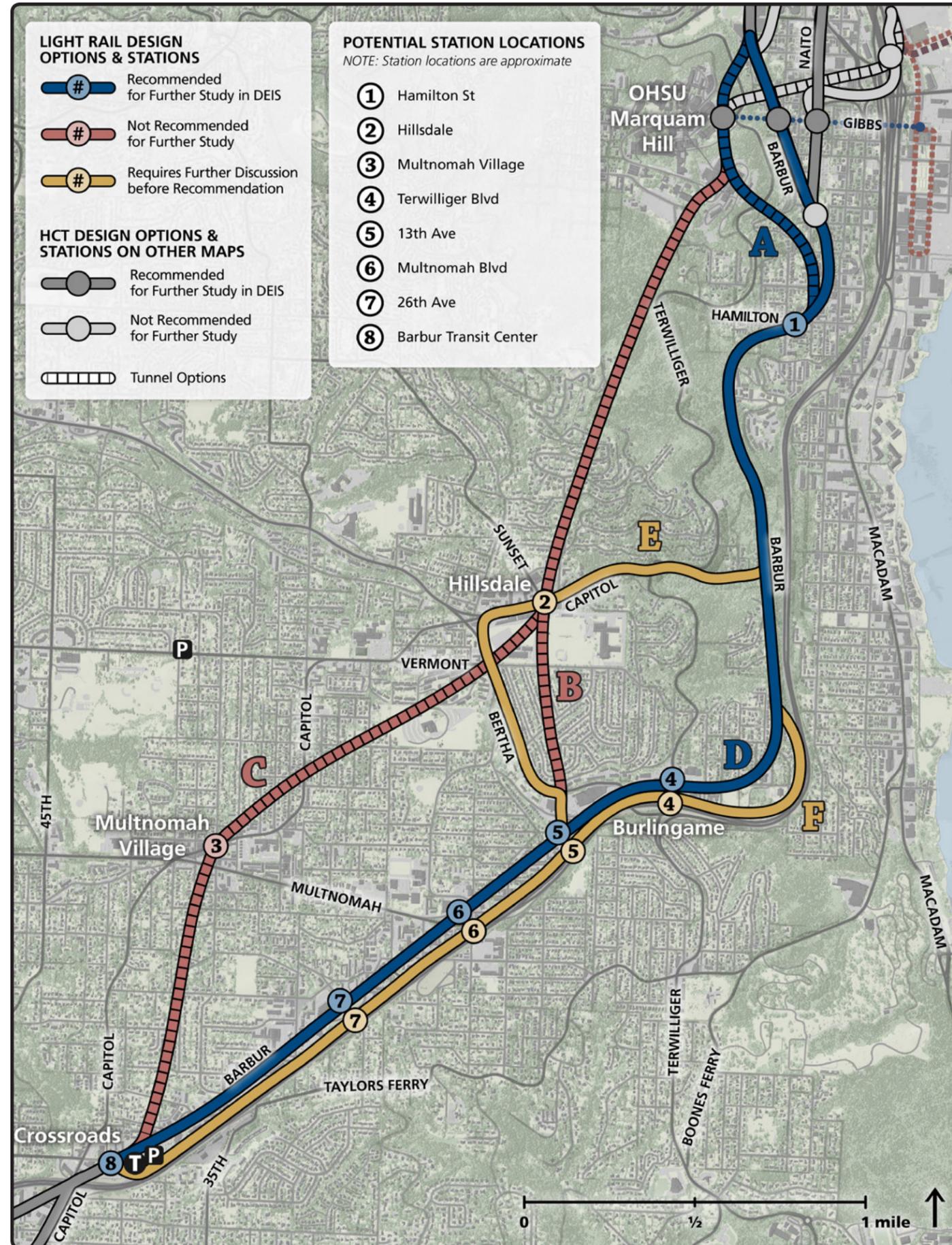
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts

DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS Requires Further Discussion before Recommendation

2. South Portland to Barbur Transit Center: LRT Design Options



Design Options

Options in this section prioritize either development potential and accessibility (Barbur, Hillsdale Loop options) or physical separation of HCT from traffic (Adjacent to I-5 option, tunnel options).

Recommended for further study because:

D. Barbur Boulevard would:

- Support the City of Portland's Barbur Concept Plan, which identifies HCT as a necessary component of the vision for Barbur Boulevard;
- Include the addition or improvement of sidewalks, bike facilities, storm water features, and other streetscaping;
- Include replacement of the Newbury and Vermont viaducts, complete with sidewalks and bike lanes.
- Cost an estimated \$918/\$1,461M (2014\$/2023\$ with finance costs) less than the short tunnel option;
- Result in fewer construction impacts to the neighborhood, compared to tunnel options that would include significant impacts at both portals—near Duniway Park to the north and near Hamilton Street to the south.

A. Short Tunnel – exit at Hamilton would:

- Serve Marquam Hill/OHSU with a deep station similar to the MAX station at the Oregon Zoo;
- Avoid traffic congestion in the northern section of SW Barbur Boulevard, although it would also not serve the Lair Hill neighborhood, in contrast to surface options that would include an elevator between Marquam Hill/OHSU and SW Barbur Boulevard in the vicinity of Gibbs Street;
- Result in reliable travel times.

Further discussion required because:

E. Barbur – Hillsdale loop using Capitol Hwy & Bertha would:

- Provide HCT service to Hillsdale without bypassing significant numbers of households or employment where the alignment would deviate from SW Barbur Boulevard;
- Potentially include the addition of a new pedestrian/ bicycle structure parallel to the Newbury and Vermont viaducts despite the alignment bypassing them;
- Require a cut-and cover tunnel to avoid the commercial section of Hillsdale, resulting in higher costs.

F. Adjacent to I-5 would:

- Avoid key intersections and business accesses along SW Barbur Boulevard;
- Require significant structure on steep slopes to avoid Barbur Boulevard and ramps;
- Cost an estimated \$87/\$138M (2014\$/2023\$ with finance costs) more than Barbur option;
- Provide more limited support for the Barbur Concept Plan;
- Result in more difficult pedestrian connections to stations;
- Not include pedestrian and bike improvements to Barbur Boulevard or along the LRT alignment.

Not recommended because:

B. Medium Tunnel – exit at Bertha would:

- Be very expensive;
- Result in severe construction impacts.

C. Long Tunnel – exit at Barbur Transit Center would:

- Be very expensive;
- Result in severe construction impacts;
- Not support the Barbur Concept Plan as HCT would bypass the historic section of the boulevard.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
2. South Portland to Barbur Transit Center								
A	Short Tunnel - exit at Hamilton	○	◐	◐	◐	◐	◐	◐
B	Medium Tunnel - exit at Bertha	○	●	○	●	◐	◐	◐
C	Long Tunnel - exit at Barbur Transit Center	○	●	○	●	◐	◐	◐
D	Barbur - South Portland to Crossroads	●	◐	◐	◐	◐	◐	◐
E	Barbur - Hillsdale loop using Capitol Hwy & Bertha (tunnel)	◐	◐	●	◐	●	◐	◐
F	Adjacent to I-5	◐	◐	◐	○	◐	◐	◐

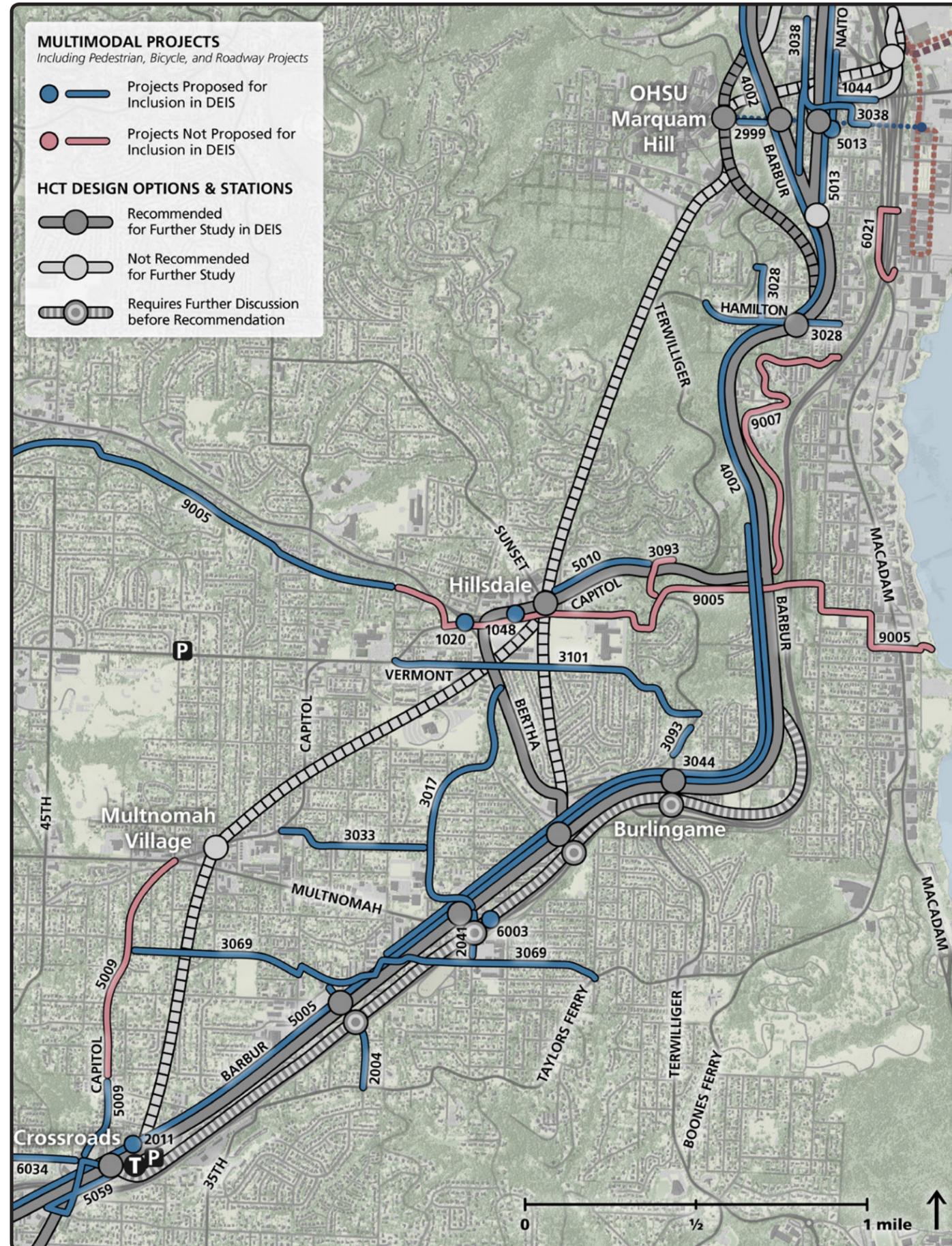
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts

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Best ● ◐ ◑ ○ Worst

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS Requires Further Discussion before Recommendation

2. South Portland to Barbur Transit Center: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas along the alignment options. This section of the corridor is especially lacking in pedestrian and bicycle facilities and requires extra attention to get people to stations without driving. Several projects were outside the immediate walkshed of any potential station area and were not recommended.

### City/Ownership	Project Title Project Description	Cost Primary Mode	Draft DEIS Recommendation
1020 Portland	Beaverton Hillsdale / Bertha / Capitol Hwy. Intersection Improvements Redesign intersection to improve safety.	\$ Auto/ Freight	With surface Hillsdale/Capitol alignment: Include
1044 Portland ODOT	South Portland Circulation and Connectivity (Ross Island Bridge ramp connections) Adds a new ramp connection between I-405 and the Ross Island Bridge from Kelly Avenue. Restore at-grade intersections along Naito Parkway, with new signalized intersections at Ross Island Bridge access and at Hooker Street. Removes several existing roadways and ramp connections.	\$\$\$\$ Auto/ Freight	With Naito alignment: Include
1048 Portland	Traffic Calming Calm traffic in the Burlingame and Hillsdale retail districts	¢ Auto/ Freight	With Hillsdale station: Include station access and safety treatments in Hillsdale TC (50%)
2004 Portland	26th Ave, SW (Spring Garden - Taylors Ferry): Pedestrian Improvements Construct a walkway for pedestrian travel and access to transit and install street lighting	¢ Pedestrian	With Barbur/26th station: Include
2011 Portland ODOT	Connections to Transit/Transit Improvements: Barbur & Taylors Ferry New steps/ramp connecting SW Taylors Ferry frontage road to Barbur across from transit center at existing signalized crossing	¢ Pedestrian	All options: Include. Note: may be funded through ODOT.
2041 Portland	SW 19th Ave sidewalks: Barbur - Spring Garden Construct new sidewalks where none exist (DA)	¢ Pedestrian	With Barbur/Multnomah station: Include
3017A Portland	Capitol Hill Rd bikeway -from SW Barbur Blvd to SW Bertha Blvd Multiple bicycle facility types: bicycle boulevard or enhanced shared roadway (Barbur - Troy; 21st - Custer); bicycle boulevard or advisory bike lane (Troy - 21st); enhanced shared roadway (Custer - Bertha)	¢ Bicycle	With Barbur/Multnomah station: Include
3017B Portland	Capitol Hill Rd sidewalks -from SW Barbur Blvd to SW Bertha Blvd Install sidewalk on Capitol Hill Road from Barbur to Bertha	\$ Pedestrian	With Barbur/Multnomah station: Include from Barbur to existing sidewalk at Custer Park (35%)
3028 Portland	Inner Hamilton bikeway -from SW Terwilliger Blvd to SW Corbett Ave Enhanced shared roadway. Includes connection to Terwilliger on SW Hamilton Terrace	¢ Bicycle	With Barbur/Hamilton station: Include
3033A Portland	Inner Troy bikeway -from SW Capitol Hwy to SW Capitol Hill Rd Bike boulevard from SW Capitol Hwy to SW Capitol Hill Rd	¢ Bicycle	With Barbur/Multnomah station: Include

Multimodal Projects Continued on Next Page

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

2. South Portland to Barbur Transit Center: Multimodal Projects

DISCUSSION DRAFT 5/6/14

#### City/Ownership	Project Title Project Description	Cost Primary Mode	Draft DEIS Recommendation
3033B Portland	Inner Troy sidewalks - from SW Capitol Hwy to SW Capitol Hill Rd Install sidewalk from SW Capitol Hwy to SW Capitol Hill Rd	\$ Pedestrian	Do not include
3093B Portland	Terwilliger sidewalk (Capitol to Terwilliger Pl) Provide sidewalk from SW Capitol Hwy south to SW Terwilliger Place	¢ Pedestrian	Do not include
3069B Portland	Spring Garden/Dolph Ct, SW (Capitol Hwy - Barbur): Sidewalks Install sidewalk along Dolph Ct from Capitol Hwy to 26th Way and along Spring Garden from 26th Way to Barbur	\$ Pedestrian	With Barbur/26th or Barbur/Multnomah station: Include from 27th Ave to intersection of 26th Way/Dolph Ct. (15%)
3093A Portland	Terwilliger bikeway gaps Separated bicycle route in-roadway. Eliminate key gaps in the Terwilliger Blvd bikeway.	¢ Bicycle	With Terwilliger station: Include lower section (near Barbur) (50%)
3101 Portland	Vermont-Chestnut bikeway -from SW Capitol Hwy to SW Terwilliger Blvd Bicycle boulevard	¢ Bicycle	With Terwilliger station: Include
4002 Portland ODOT	Barbur Blvd, SW (3rd - Terwilliger): Multimodal Improvements Construct Improvements for transit, bikes and pedestrians. Transit improvements include preferential signals, pullouts, shelters, left turn lanes, sidewalks, and crossing improvements.	\$\$ Multimodal	With Barbur alignment: Include
5005 Portland ODOT	Barbur Blvd, SW (Terwilliger - City Limits): Multimodal Improvements Complete boulevard design improvements including sidewalks and street trees, safe pedestrian crossings, enhance transit access and stop locations, and bike lanes (Terwilliger - SW 64th or Portland City Limits).	\$\$\$\$ Multimodal	Barbur stations including Tunnel and I-5 options: Include within 1/2 mile of stations (20%) With Barbur alignment: Include
5009 Portland	Capitol Hwy Improvements (replace roadway and add sidewalks) Improve SW Capitol Highway from SW Multnomah Boulevard to SW Taylors Ferry Road per the Capitol Highway Plan. Replace Existing Roadway and add sidewalks, bike lanes and green stormwater features.	\$\$\$ Multimodal	All options: Include one side from Taylors Ferry to Alice Street (15%)
5010 Portland	Capitol Hwy, SW (Terwilliger - Sunset): Multimodal Improvements Construct sidewalks, crossing improvements for access to transit and bike improvements, and install left turn lane at the Capitol/Burlingame intersection	\$ Multimodal	With surface Hillsdale/Capitol alignment: Include
5013 Portland ODOT	Naito/South Portland Improvements (left turn pockets with bike/ped and remove tunnel, ramps and viaduct) Reconstruct Naito Pkwy as two-lane road w/bike lanes, sidewalks, left turn pockets, & on-street parking. Remove grade separation along Naito at Barbur Blvd. (tunnel), the Ross Island Bridge, Arthur/Kelly (viaduct), and the Grover pedestrian bridge.	\$\$\$\$ Multimodal	With Barbur station: Include signalized pedestrian crossing(s) of Naito near station (1%) With Naito alignment: Include
5059 Portland ODOT	SW Portland/ Crossroads Multimodal Project (roadway realignments and modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp) Implement Barbur Concept Plan walk audit recommendations in the SW Portland TC, including modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp to support safer and more efficient operation for all modes. Project specifics include intersection types and roadway realignments to be refined.	\$\$\$\$ Multimodal	All options: Include multimodal investment at the Barbur/Capitol/Huber/Taylors Ferry intersections at this location. Includes improved pedestrian crossings. (5%)
6003 Portland	Multnomah viaduct bicycle and pedestrian facilities Construct new bicycle and pedestrian facilities on Barbur at/parallel to Multnomah Blvd. viaduct	\$ Bike/Ped	With Barbur alignment: Include

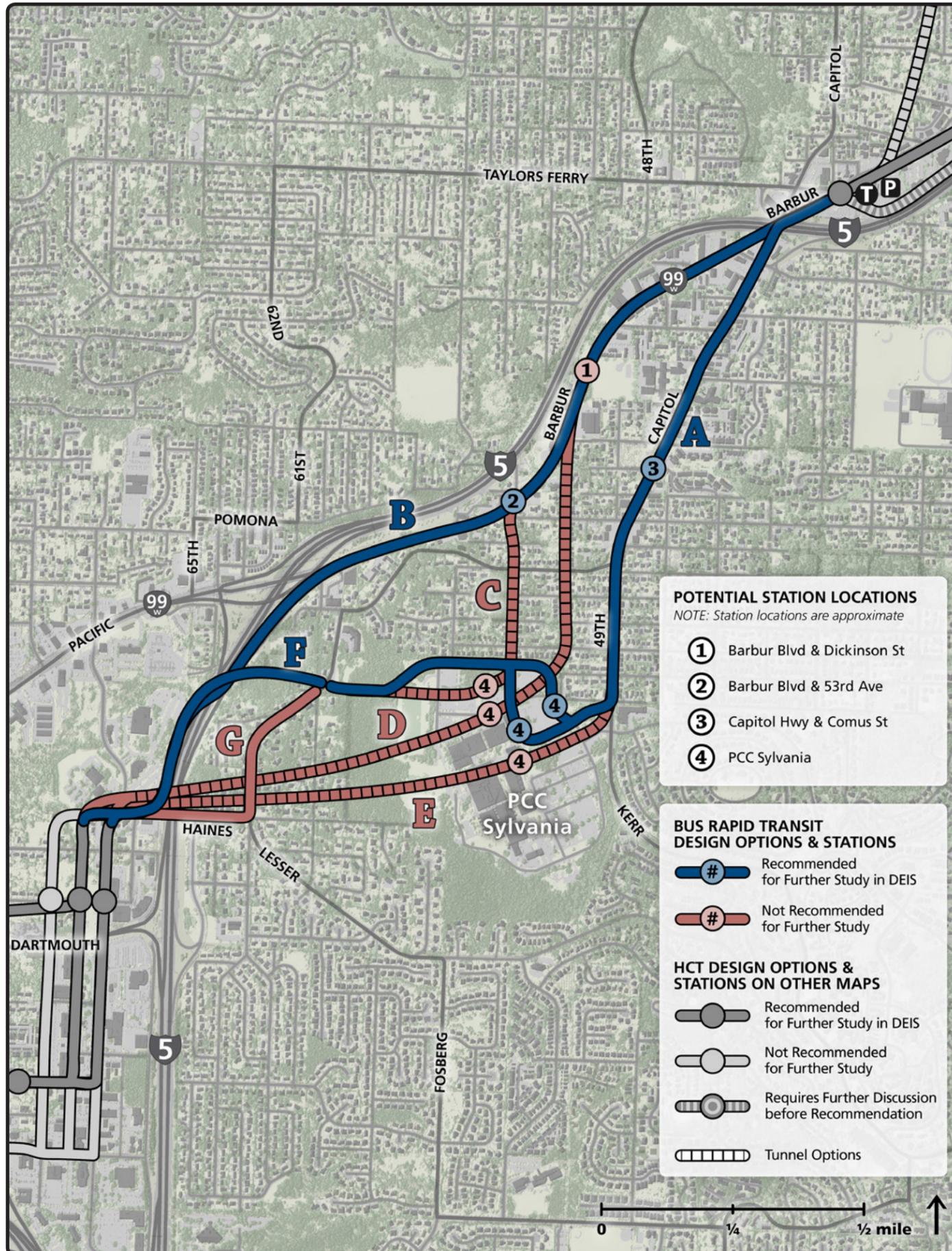
#### City/Ownership	Project Title Project Description	Cost Primary Mode	Draft DEIS Recommendation
6021 Portland	Hood Avenue Pedestrian Improvements (Lane to Macadam) Install sidewalk with barrier along east side and pedestrian crossing at Lane Street	\$ Bike/Ped	Do not include
6034 Portland	Taylors Ferry, SW (Capitol Hwy - City Limits): Bicycle & Pedestrian Improvements SW Taylors Ferry Rd: Provide bicycle lanes, including shoulder widening and drainage, and construct sidewalks for access to transit	\$ Bike/Ped	All options: Include Capitol to 49th (40%)
9005 Portland	Red Electric Trail: Fanno Creek Trail to Willamette Park Provide east-west route for pedestrians and cyclists in SW Portland that connects and extends the existing Fanno Creek Greenway Trail to Willamette Park. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$\$\$ Multi-Use Trail	With Hillsdale station: Include Hillsdale to Shattuck (10%)
9007 Portland	Slavin Road to Red Electric Trail: Barbur to Corbett Build Multi use trail on Slavin Road from Barbur to Corbett. The Red Electric Trail is listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$ Multi-Use Trail	Do not include

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

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3. PCC Area



Design Options

Options in this section are differentiated by how they serve the PCC-Sylvania campus. BRT could serve the campus directly by a surface option via Capitol Highway or by tunnel; the surface option via Barbur would require a longer walk to campus, but would result in a much faster alignment compared to Capitol Highway options, and a much less expensive alignment compared to tunnel options.

Recommended for further study because:

B. Barbur – Crossroads to Tigard (with improved PCC walk via SW 53rd Avenue) would:

- Prioritize travel time, saving approximately four minutes over BRT routes to the PCC campus;
- Feature an improved walk connection to the PCC campus from SW 53rd Avenue, with a raised station, and paving and sidewalks on SW 53rd Avenue. The walk would be slightly less than 1/3 mile uphill to the edge of the PCC property, and nearly 1/2 mile to PCC buildings;
- Support a new park and ride lot on vacant property north of SW Barbur Boulevard at SW 55th Avenue.

A. PCC Campus (Front Door or Circumferential around north end) would:

- Prioritize accessibility and development potential, serving the PCC-Sylvania campus directly;
- Include an additional station on SW Capitol Highway.

F. New bridge over I-5 (crossing option for campus routes) would:

- Provide the fastest travel time;
- Minimize disruptions to residential neighborhoods near PCC.

Not recommended because:

C. Short Tunnel via Barbur,

D. Tunnel via Barbur, and

E. Tunnel via Capitol Hwy would:

- Be expensive and compromise the lower cost advantage of the BRT mode over LRT;
- Result in severe construction impacts.

G. Lower Haines Road (crossing option for campus routes) would:

- Impact properties by widening at least one side of Lesser Road to provide adequate space for BRT, bike lanes and sidewalks;
- Require sharp turning movements and operation on steep grades that would slow the BRT.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
3a. PCC Area								
A	PCC Campus via Capitol Hwy (uses either I-5 crossing)	●	○	●	●	●	●	●
B	Barbur - Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)	●	●	●	●	●	●	●
C	Short Tunnel via Barbur (uses new bridge I-5 crossing)	○	●	●	○	●	●	●
D	Tunnel via Barbur (tunnels under I-5)	○	●	●	●	●	●	●
E	Tunnel via Capitol Hwy (tunnels under I-5)	○	●	●	●	●	●	●
3b. PCC Area - I-5 Crossing Options for Campus Routes								
F	New Bridge over I-5	●	●	●	●	●	●	●
G	Lower Haines Road	●	○	●	●	●	●	●

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Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

3. PCC Area: LRT Design Options



Design Options

Options in this section are differentiated by how they serve the PCC-Sylvania campus. Because of the steep topography, LRT could only provide direct service to the campus by tunnel. The surface option via Barbur would require a longer walk to campus, but would be much less expensive and disruptive to the neighborhood to construct and would provide a more direct route for riders not accessing PCC.

Recommended for further study because:

B. Barbur – Crossroads to Tigard (with improved PCC walk via SW 53rd Avenue) would:

- Be the least expensive option;
- Feature an improved walk connection to the PCC campus from SW 53rd Avenue, potentially with a raised station, and paving and sidewalks on SW 53rd Avenue. The walk would be slightly less than 1/3 mile uphill to the edge of the PCC property, and nearly 1/2 mile to PCC buildings;
- Support a new park and ride lot on vacant property north of SW Barbur Boulevard at SW 55th Avenue;
- Include a new transit crossing over I-5 to the Tigard Triangle.

Further discussion required because:

C. Short Tunnel via Barbur would:

- Serve PCC-Sylvania campus directly;
- Result in significant construction impacts to the neighborhood;
- Cost an estimated \$320/\$509M (2014\$/2023\$ with finance costs) more than the Barbur option;
- Likely be contingent on plans for future redevelopment of the campus area.

Not recommended because:

D. Tunnel via Barbur and

E. Tunnel via Capitol Hwy would:

- Be very expensive compared to the shorter tunnel option without providing significantly more benefit.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
3. PCC Area								
B	Barbur - Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)	●	●	●	●	●	●	●
C	Short Tunnel via Barbur (uses new bridge I-5 crossing)	●	●	●	●	●	●	●
D	Tunnel via Barbur (tunnels under I-5)	○	○	○	○	○	○	○
E	Tunnel via Capitol Hwy (tunnels under I-5)	○	○	○	○	○	○	○

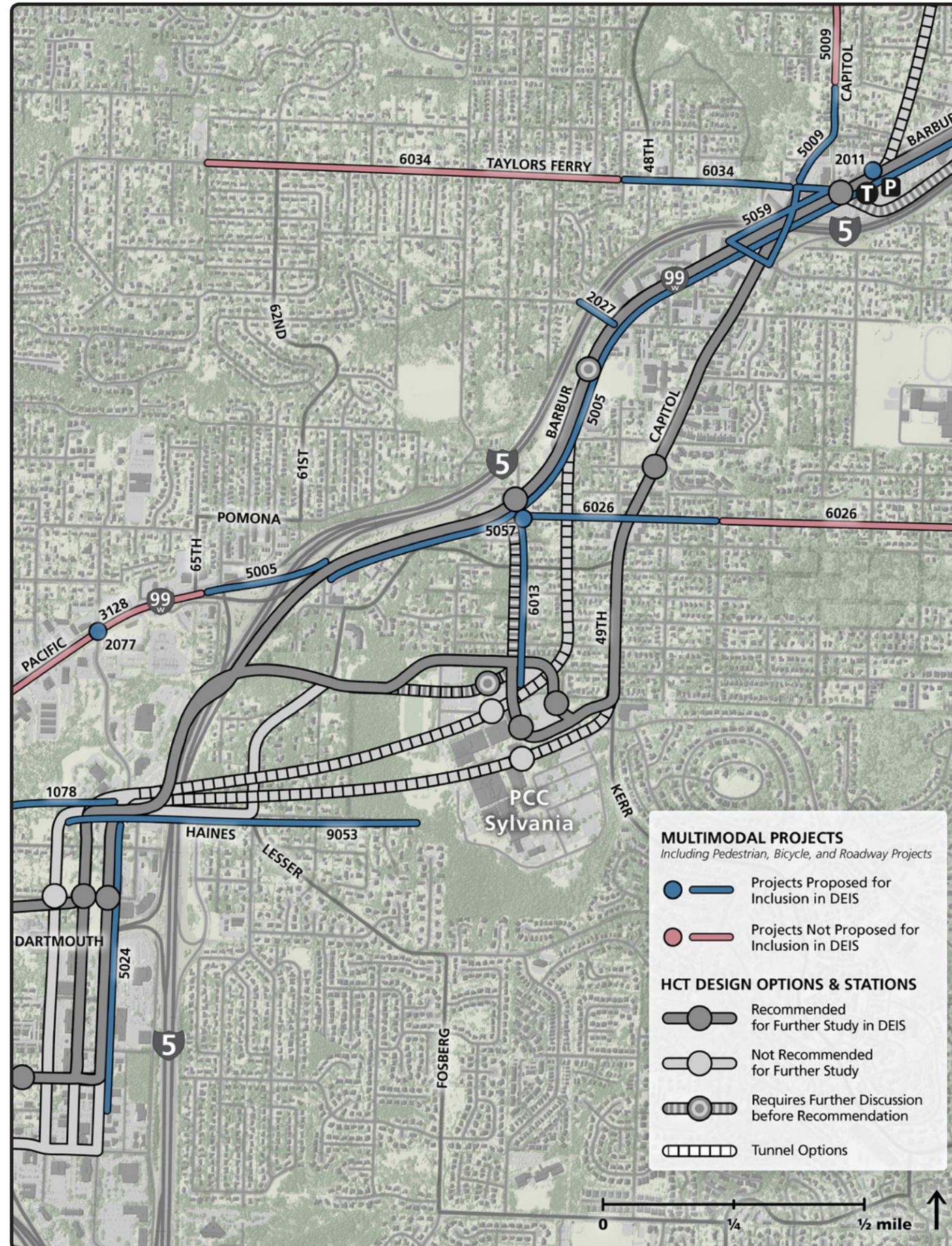
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts

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Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS Requires Further Discussion before Recommendation

3. PCC Area: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas near PCC. If the alignment follows Barbur near I-5, a pedestrian connection over I-5 is recommended to improve station access for neighborhoods north of I-5.

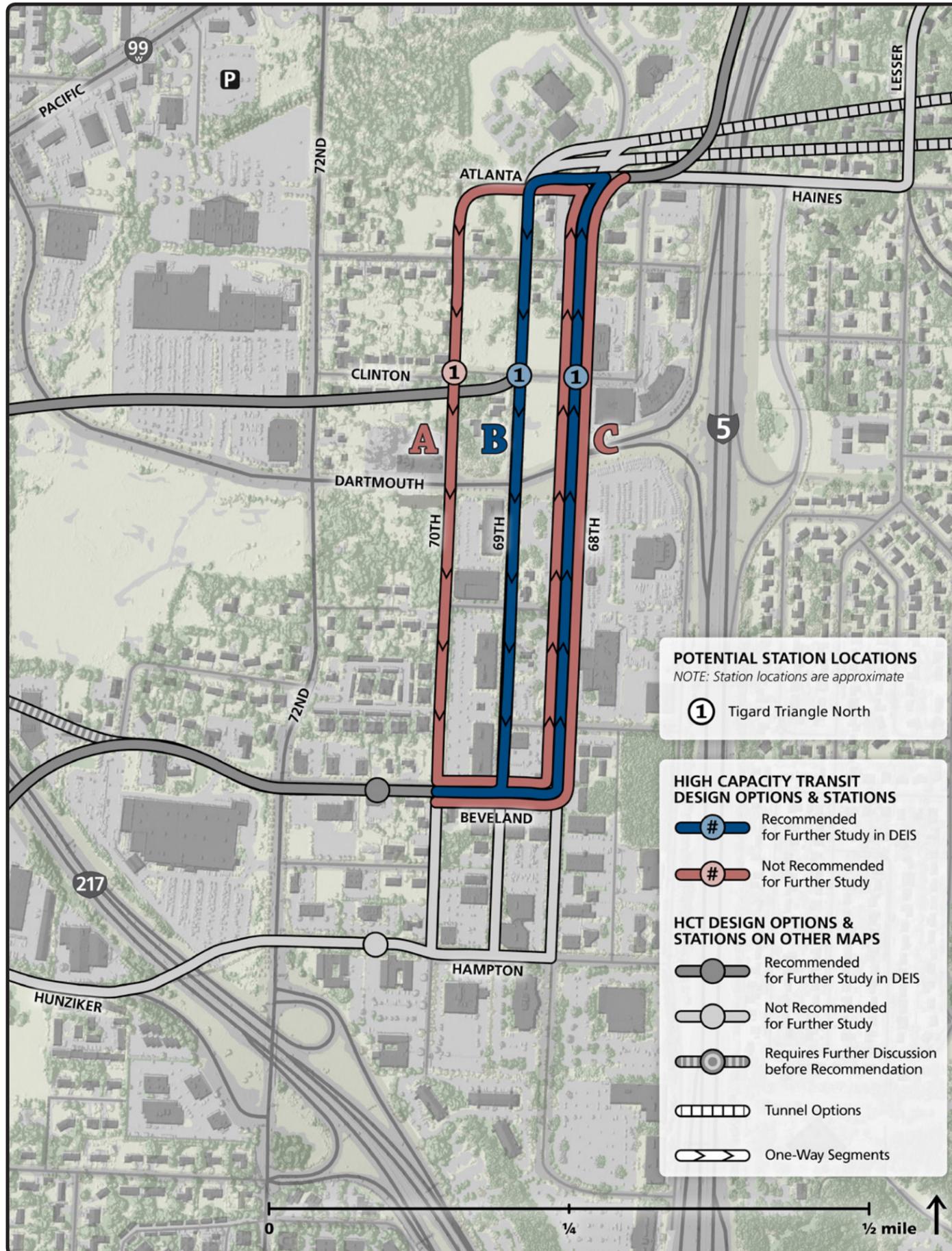
###	Project Title	Cost	Draft DEIS Recommendation
City/Ownership	Project Description	Primary Mode	
1078 Tigard	Atlanta Street Extension (new roadway) Extend Atlanta Street west to Dartmouth Street	\$\$ Auto/ Freight	With North Triangle station: Include.
2011 Portland ODOT	Connections to Transit/Transit Improvements: Barbur & Taylors Ferry New steps/ramp connecting SW Taylors Ferry frontage road to Barbur across from transit center at existing signalized crossing	¢ Pedestrian	All options: Include. Note: may be funded through ODOT.
2027 Portland ODOT	Pedestrian Overpass near Markham School Construct pedestrian path and bridge over Barbur Blvd. and I-5 to connect SW Alfred and SW 52nd to the rear of Markham School.	\$\$ Pedestrian	With Barbur/53rd station: Include adjacent to station-area if station is on Barbur
2077 Tigard ODOT	Tigard Transit Center crossing improvements. Shorten crossing distances, make crosswalks more visible, and provide more time for pedestrians to cross at the intersections of 99W and SW Greenburg Rd., 99W & SW Hall Blvd., and 99W & SW Dartmouth St.	\$ Pedestrian	All options: Include crosswalk visibility and timing elements at Greenburg, Hall, Dartmouth, 72nd, and 68th.
3128 Tigard ODOT	Pacific Hwy-99W Bike Lanes in Tigard Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan (5/9/13).	\$ Bicycle	Do not include
5005 Portland ODOT	Barbur Blvd, SW (Terwilliger - City Limits): Multimodal Improvements Complete boulevard design improvements including sidewalks and street trees, safe pedestrian crossings, enhance transit access and stop locations, and bike lanes (Terwilliger - SW 64th or Portland City Limits).	\$\$\$\$ Multimodal	Barbur stations including Tunnel and I-5 options: Include within 1/2 mile of stations (20%) With Barbur alignment: Include
5009 Portland	Capitol Hwy Improvements (replace roadway and add sidewalks) Improve SW Capitol Highway from SW Multnomah Boulevard to SW Taylors Ferry Road per the Capitol Highway Plan. Replace Existing Roadway and add sidewalks, bike lanes and green stormwater features.	\$\$\$ Multimodal	All options: Include one side from Taylors Ferry to Alice Street (15%)
5024 Tigard	68th Avenue (widen to 3 lanes) Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	\$\$\$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%) With 68th alignment: Include
5057 Portland	SW 53rd and Pomona (improves safety of ped/bike users) Reconfigure and improve intersection to manage traffic turning speeds, and improve safety of ped/bike users between Barbur and Pomona.	¢ Multimodal	With Barbur/53rd station: Include if station is on Barbur
5059 Portland ODOT	SW Portland/ Crossroads Multimodal Project (roadway realignments and modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp) Implement Barbur Concept Plan walk audit recommendations in the SW Portland TC, including modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp to support safer and more efficient operation for all modes. Project specifics include intersection types and roadway realignments to be refined.	\$\$\$\$ Multimodal	All options: Include multimodal investment at the Barbur/Capitol/ Huber/Taylors Ferry intersections at this location. Includes improved pedestrian crossings. (5%)
6013 Portland	Barbur/PCC ped/bike Connection Neighborhood greenway connection between Barbur and PCC via SW 53rd	¢ Bike/Ped	With Barbur/53rd station: Include if station is on Barbur
6026 Portland	Pomona St: Bicycle and Ped improvements (35th to Barbur) Provide bike lanes and sidewalks	\$ Bike/Ped	With Barbur/53rd station: Include from 53rd to 45th (50%)
6034 Portland	Taylors Ferry, SW (Capitol Hwy - City Limits): Bicycle & Pedestrian Improvements SW Taylors Ferry Rd: Provide bicycle lanes, including shoulder widening and drainage, and construct sidewalks for access to transit	\$ Bike/Ped	All options: Include Capitol to 49th (40%)
9053 Portland Tigard	Ped/Bike Connection between Tigard Triangle and PCC-Sylvania Provide pedestrian/bicycle connection between the Tigard Triangle area and PCC-Sylvania	\$ Multi-Use Trail	All options: Consider opportunity to add ped/bike facilities to HCT connection

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

4. Tigard Triangle

4. Tigard Triangle: Design Options for BRT and LRT



Design Options

The options in this section would perform fairly similarly and are differentiated mainly by their locations and footprints within the Tigard Triangle, including couplet options and choices of using SW 68th, SW 69th, and SW 70th Avenues to connect the northern and southern areas of the Triangle. These options do not apply to the Clinton to Tigard Transit Center option in the following section (OR-217 Crossing), an option which would operate only in the northern section of the Triangle.

Recommended for further study because:

- B. 68th/69th Couplet would:
- Result in more efficient transit and auto travel compared to the two-way option;
 - Require less right-of-way, resulting in fewer property impacts compared to other options;
 - Best support Tigard's High Capacity Transit Land Use Plan.

Not recommended because:

- C. 68th Two-Way would:
- Require more right-of-way compared to couplet options.
- A. 68th/70th Couplet would:
- Require significantly more structure and property acquisition compared to the 68th/69th couplet due to the narrow width and steep slopes on SW 70th Avenue.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
4. Tigard Triangle								
A	68th/70th Couplet	●	●	●	●	●	●	●
B	68th/69th couplet	●	●	●	●	●	●	●
C	68th Two-Way	●	●	●	●	●	●	●

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts

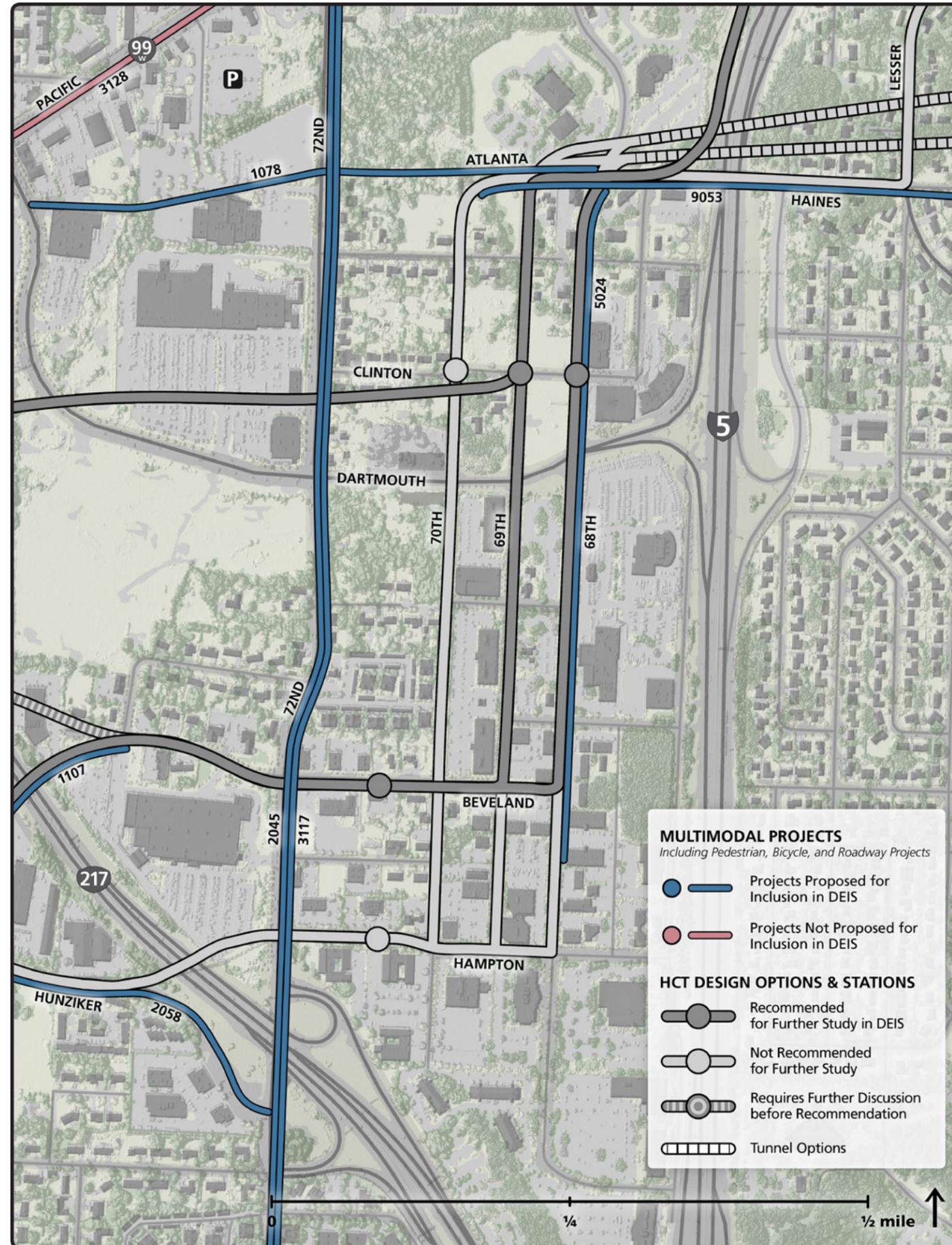
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS

Not Proposed for Further Study in DEIS

4. Tigard Triangle: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance in the Tigard Triangle include a new street connection, pedestrian and bicycle projects to improve access to potential station areas, and improving existing streets for transit. Filling gaps in the Pacific Highway bike lanes (the downtown viaduct in particular) were outside the immediate station area and were not recommended.

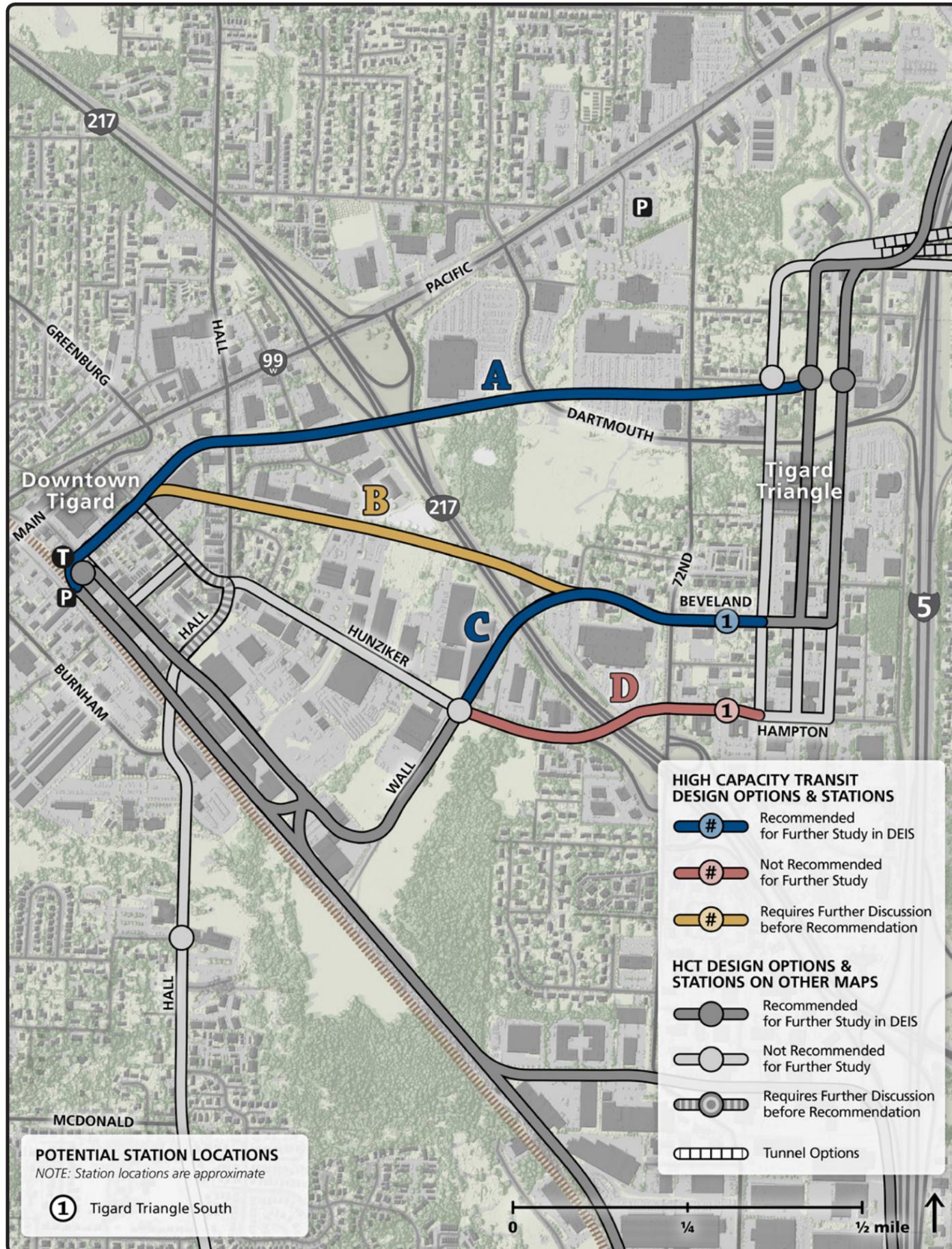
###	Project Title	Cost	Draft DEIS Recommendation
City/Ownership	Project Description	Primary Mode	
1078 Tigard	Atlanta Street Extension (new roadway) Extend Atlanta Street west to Dartmouth Street	\$\$ Auto/ Freight	With North Triangle station: Include.
1107 Tigard Washington Co.	Hwy. 217 Over-crossing - Beveland/Hampton Connection Build new connection between Hunziker Road and 72nd Avenue at Hampton or Beveland, requires over-crossing over Hwy 217, revises existing intersection.	\$\$\$\$ Auto/ Freight	With Beveland or Hampton alignment: Include
2045 Tigard	72nd Avenue sidewalks: 99W to Bonita Complete gaps in sidewalk on both sides of street from Highway 99W to Bonita Road	\$ Pedestrian	With Triangle North station: Include one side from 99W-Dartmouth (25%) With Triangle South station: Include one side Dartmouth-Hunziker (25%) With 72nd/Tech Center Drive station: Include west side Tech Center Dr-south of Landmark Ln (20%) With WES/Bonita station: Include east side Bonita-Landmark Ln (10%)
2058 Tigard	Hunziker Street Sidewalks: 72nd to Hall Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	\$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
3117 Tigard Tualatin	72nd Avenue bikeway: 99W to city limits Install bike facilities on both sides of the street from Highway 99W to South City Limits	\$ Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
3128 Tigard ODOT	Pacific Hwy-99W Bike Lanes in Tigard Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan (5/9/13).	\$ Bicycle	Do not include
5024 Tigard	68th Avenue (widen to 3 lanes) Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	\$\$\$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%) With 68th alignment: Include
9053 Portland Tigard	Ped/Bike Connection between Tigard Triangle and PCC-Sylvania Provide pedestrian/bicycle connection between the Tigard Triangle area and PCC-Sylvania	\$ Multi-Use Trail	All options: Consider opportunity to add ped/bike facilities to HCT connection

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

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5. OR-217 Crossing



Design Options

The proposed connections between the Tigard Triangle and downtown Tigard provide a choice between speed and development opportunities. Clinton to Tigard Transit Center would be significantly faster than the other options and would result in a smaller footprint in downtown Tigard, but would serve only the northern portion of the Tigard Triangle and require a comparatively long structure. Other options would continue through the southern Triangle, an area with, commuter students, and redevelopment opportunities. Each crossing option could include a multimodal (auto/ped/bike) bridge at a higher cost; a new auto connection would be preferred in the southern portion of the Triangle to the northern portion. Wetlands impacts could be a concern for the Clinton to Tigard Transit Center and for the Beveland North options.

Recommended for further study because:

A. Clinton to Tigard Transit Center would:

- Prioritize travel time, with a shorter alignment and higher speeds compared to other options;
- Avoid congested intersections at the southern end of the Triangle;
- Avoid impacts to existing industrial properties that would be affected by other options.

C. Beveland South would:

- Prioritize development with a second station in the Tigard Triangle, supporting the Tigard High Capacity Transit Land Use Plan and providing greater accessibility throughout the Triangle;
- Include a potential station, park & ride lot, and redevelopment opportunities near SW Hunziker;
- Include a multimodal facility that would provide an alternative to the existing Hunziker Street bridge and could alleviate some auto congestion around the SW 72nd Avenue interchange.

Further discussion required because:

B. Beveland North would:

- Provide a second station in the Tigard Triangle;
- Provide a more direct connection to the Tigard Transit Center compared to the Beveland South option.

Not recommended because:

D. Hampton would:

- Impact traffic at the OR-217 interchanges at SW Hunziker road and SW 72nd Avenue;
- Be the least direct, slowest option without providing access to additional riders.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
5. OR-217 Crossing								
A	Clinton to Tigard Transit Center	●	●	○	●	●	●	●
B	Beveland North	●	●	○	○	●	●	●
C	Beveland South	●	○	●	○	●	●	●
D	Hampton	○	○	●	○	●	●	○

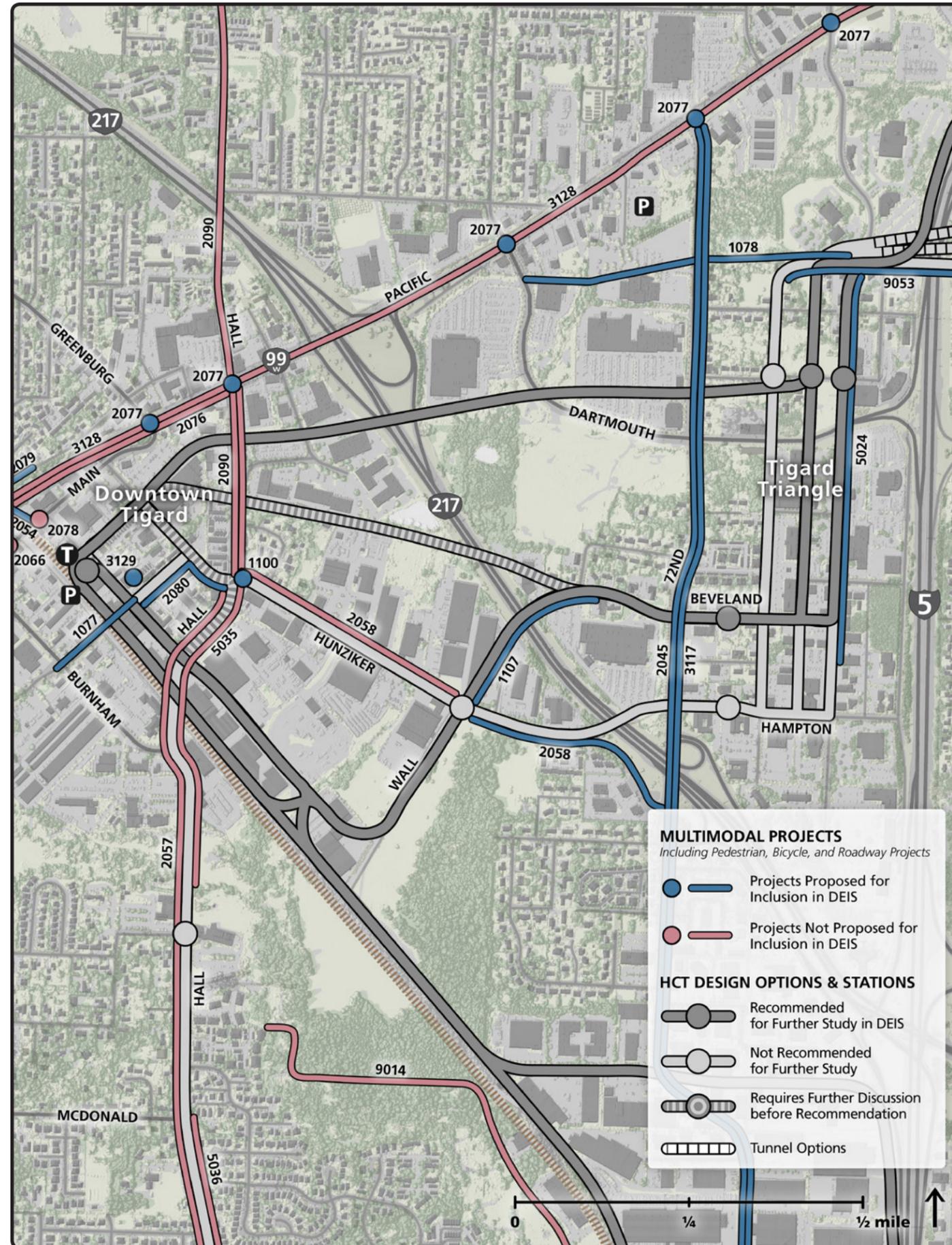
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts

DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS Requires Further Discussion before Recommendation

5. OR-217 Crossing: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include a new multimodal street connection over OR 217 and sidewalk projects to improve access to potential station areas.

###	Project Title	Cost	Draft DEIS Recommendation
City/Ownership	Project Description	Primary Mode	
1107 Tigard Wash. Co.	Hwy. 217 Over-crossing - Beveland/Hampton Connection Build new connection between Hunziker Road and 72nd Avenue at Hampton or Beveland, requires over-crossing over Hwy 217, revises existing intersection.	\$\$\$\$ Auto/ Freight	With Beveland or Hampton alignment: Include
2045 Tigard	72nd Avenue sidewalks: 99W to Bonita Complete gaps in sidewalk on both sides of street from Highway 99W to Bonita Road	\$ Pedestrian	With Triangle North station: Include one side from 99W-Dartmouth (25%) With Triangle South station: Include one side Dartmouth-Hunziker (25%) With 72nd/Tech Center Drive station: Include west side Tech Center Dr-south of Landmark Ln (20%) With WES/Bonita station: Include east side Bonita-Landmark Ln (10%)
2054 Tigard	Commercial Street sidewalks: Main to Lincoln Street Install sidewalks on both sides of the street from Main Street to Lincoln Street	¢ Pedestrian	All options: Include on one side of street. Note: may be funded through STIP
2057 Tigard	Hall Boulevard sidewalks: Hunziker to city limits Complete gaps in sidewalk on alternating sides of street from Hunziker Street to the South City Limits	\$ Pedestrian	Do not include
2058 Tigard	Hunziker Street Sidewalks: 72nd to Hall Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	\$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
2066 Tigard ODOT	Tigard Town Center (Downtown) Pedestrian Improvements Improve sidewalks, lighting, crossings, bus shelters and benches throughout the downtown including: Highway 99W, Hall Blvd, Main Street, Hunziker, Walnut and neighborhood streets.	\$ Pedestrian	Do not include. Vaguely defined; specific transit priorities addressed in other projects.
2077 Tigard ODOT	Tigard Transit Center crossing improvements. Shorten crossing distances, make crosswalks more visible, and provide more time for pedestrians to cross at the intersections of 99W and SW Greenburg Rd., 99W & SW Hall Blvd., and 99W & SW Dartmouth St.	\$ Pedestrian	All options: Include crosswalk visibility and timing elements at Greenburg, Hall, Dartmouth, 72nd, and 68th.
2079 Tigard	Tigard Transit Center pedestrian path Formalize the informal path running from Center Street to SW Commercial St. to SW Hall Blvd., by paving it, making it ADA accessible, providing lighting, and wayfinding signage.	¢ Pedestrian	All options: Include. Note: may be funded through STIP
2080 Tigard	Tigard Transit Center sidewalk infill Build sidewalks, where there are none, along SW Scoffins St. & SW Ash St. These streets are near the Tigard Transit Center and provide access to it. Ensure there is a landscaped buffer between pedestrians and motor vehicles.	¢ Pedestrian	All options: Include

Multimodal Projects Continued on Next Page

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

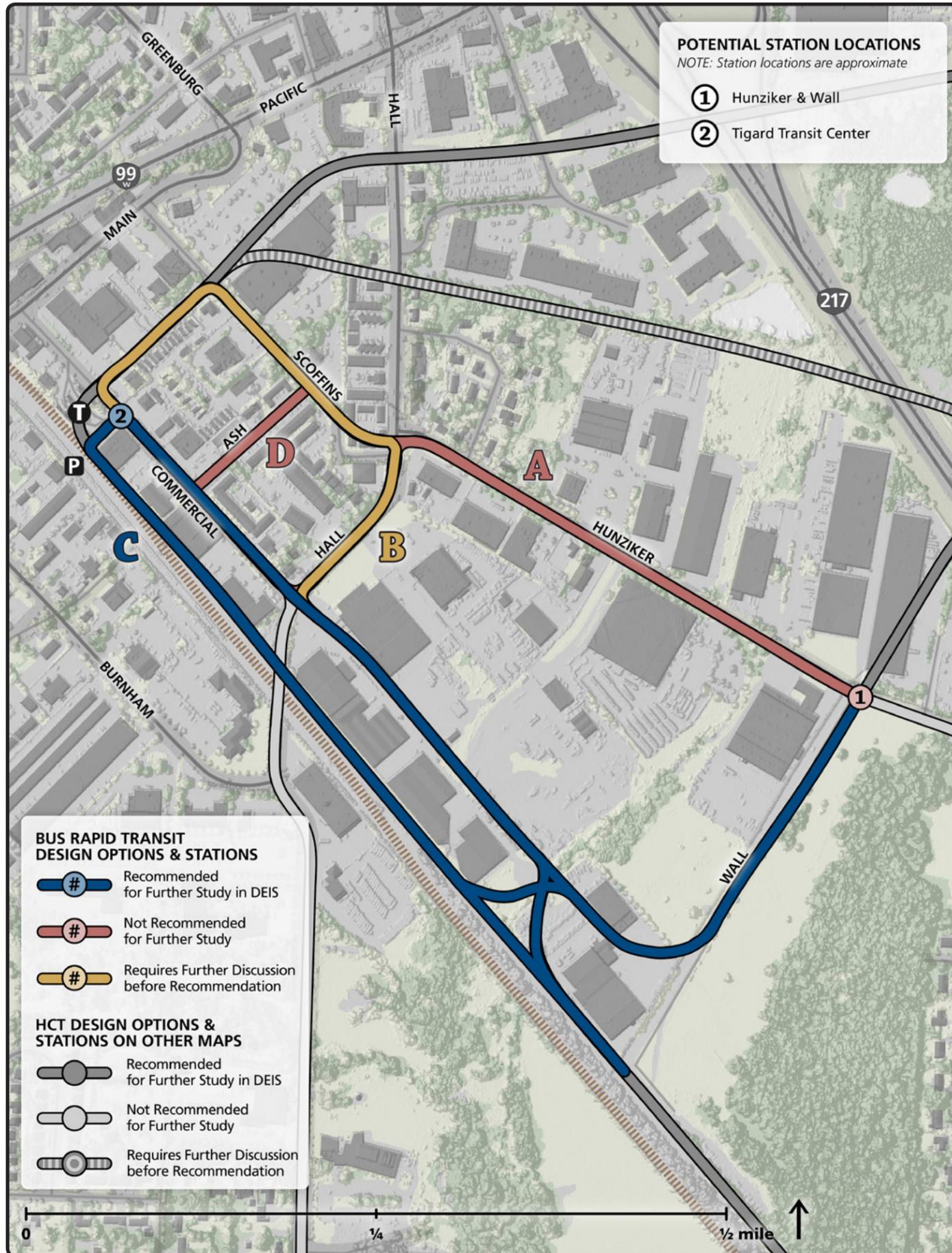
5. OR-217 Crossing: Multimodal Projects

2090 Tigard	Hall Blvd sidewalks: Locust to Hunziker Locust St to Hunziker St - pedestrian infill	\$ Pedestrian	Do not include
3117 Tigard Tualatin	72nd Avenue bikeway: 99W to city limits Install bike facilities on both sides of the street from Highway 99W to South City Limits	\$ Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
3128 Tigard ODOT	Pacific Hwy-99W Bike Lanes in Tigard Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan (5/9/13).	\$ Bicycle	Do not include
3129 Tigard	Tigard Transit Center Bicycle Hub Provide bicycle hub at Tigard Transit Center	¢ Bicycle	All options: Include as bike 'n ride
5024 Tigard	68th Avenue (widen to 3 lanes) Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	\$\$\$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%) With 68th alignment: Include
5035 Tigard Wash. Co. ODOT	Hall Boulevard Widening, Highway 99W to Fanno Creek Widen to 3 lanes, or for transit, plus on-street parking (or potential 5 lanes); build sidewalks and bike lanes; safety improvements	\$ Multimodal	Do not include
5036 Tigard Wash. Co.	Hall Boulevard Widening, McDonald Street to Fanno Creek including creek bridge Widen to 3 lanes or for transit; preserve ROW for 5 lanes; build sidewalks and bike lanes; safety improvements	\$\$\$ Multimodal	Do not include
9014 Tigard	Fanno Creek Trail - Tualatin River to Tigard St Complete gaps along the Fanno Creek multiuse path from the Tualatin River to Tigard Library and from Pacific Hwy-99W to Tigard Street. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$ Multi-Use Trail	With WES/Bonita station: Include from Bonita to Ashford (20%) With Durham/79th station: Include Bonita to Durham Park (40%) With Bridgeport West station: Include Bonita to Ashford (20%)
9053 Portland Tigard	Ped/Bike Connection between Tigard Triangle and PCC-Sylvania Provide pedestrian/bicycle connection between the Tigard Triangle area and PCC-Sylvania	\$ Multi-Use Trail	All options: Consider opportunity to add ped/bike facilities to HCT connection

Include in DEIS
Include Partially
Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

6. Downtown Tigard



Design Options

The following options in downtown Tigard correspond with the Beveland South or Hampton OR-217 Crossing options. The northern crossing options, Beveland North and Clinton to Tigard Transit Center, would connect to the WES alignment or to Hall Boulevard via a new street between Main Street and Ash Avenue. The main difference between the downtown Tigard options connecting to southern crossings is the footprint required to access the Tigard Transit Center in downtown Tigard.

Recommended for further study because:

- C. Commercial Street to Tigard TC (no downtown loop) would:
 - Result in the fastest travel time among the three options;
 - Have the smallest footprint in downtown Tigard.

Further discussion required because:

- B. Commercial Street with Downtown Loop via Hall would:
 - Avoid the sharp curve included with the non-loop option that could be challenging for BRT;
 - Result in a longer, slower alignment.

Not recommended because:

- D. Downtown Loop via Ash Street instead of Loop via Hall would:
 - Result in more property impacts to downtown Tigard compared to alternative loop.
- A. Hunziker would:
 - Require BRT operation in mixed traffic in order to avoid eliminating access to industrial business by left-turning trucks resulting in slower, less reliable service.

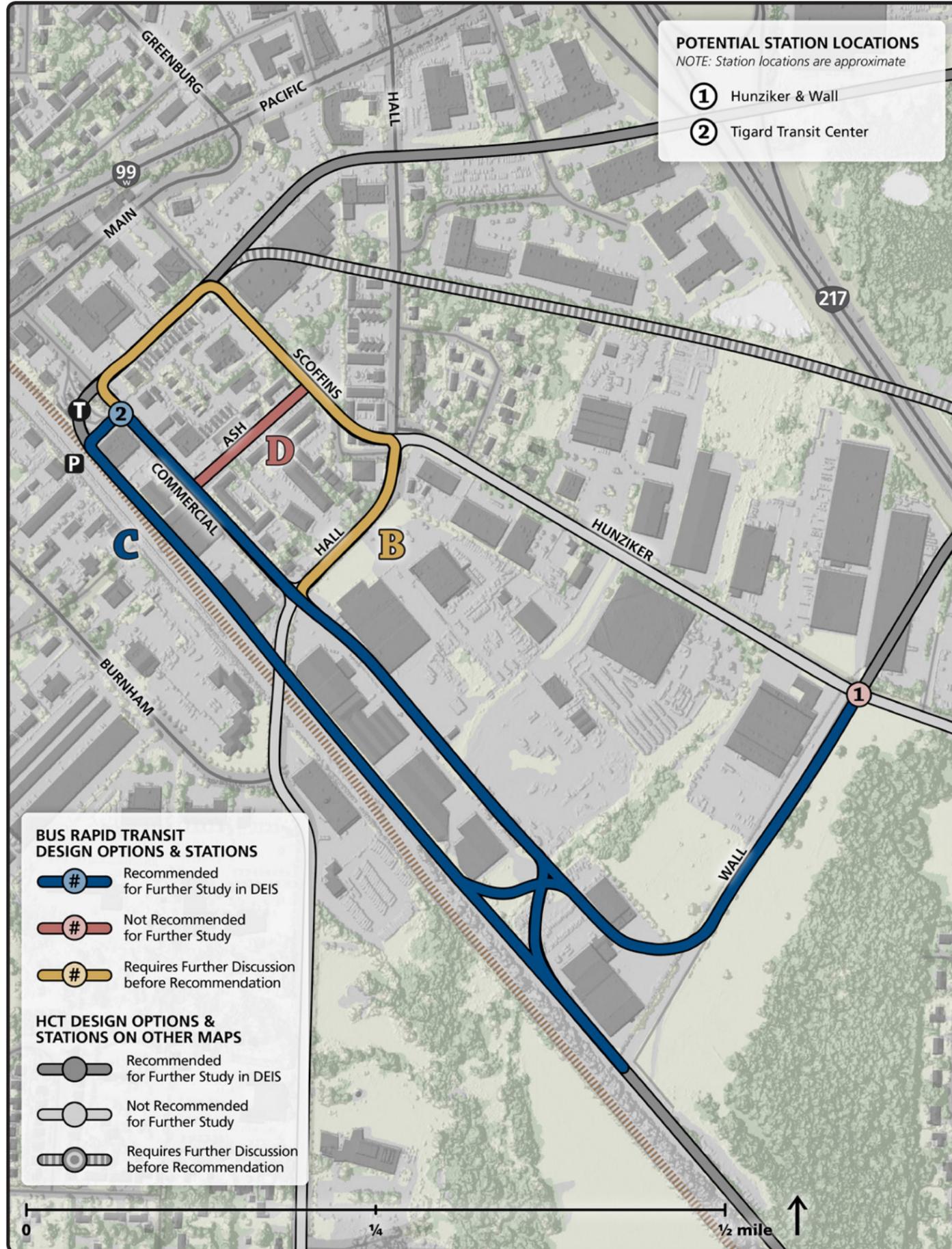
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
6. Downtown Tigard								
A	Hunziker (with downtown loop)	●	○	◐	◑	◒	◓	◔
B	Commercial St with Downtown Loop via Hall	◐	◑	◒	◓	◔	◕	◖
C	Commercial St to Tigard TC (no downtown loop)	◐	◑	◒	◓	◔	◕	◖
D	Downtown Loop via Ash St instead of Loop via Hall	◐	◑	◒	◓	◔	◕	◖

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Best ● ◐ ◑ ◒ ◓ ◔ ◕ ◖ Worst

Proposed for Further Study in DEIS (Blue) / Not Proposed for Further Study in DEIS (Red) / Requires Further Discussion before Recommendation (Yellow)

6. Downtown Tigard: LRT Design Options



Design Options

The following options in downtown Tigard correspond with the Beveland South or Hampton OR-217 Crossing options. The northern crossing options, Beveland North and Clinton to Tigard Transit Center, would connect to the WES alignment or to Hall Boulevard via a new street between Main Street and Ash Avenue. The main difference between the downtown Tigard options connecting to southern crossings is the footprint required to access the Tigard Transit Center in downtown Tigard.

Recommended for further study because:

C. Commercial Street to Tigard TC (no downtown loop) would:

- Result in the fastest travel time among the three options;
- Have the smallest footprint in downtown Tigard.

Further discussion required because:

B. Commercial Street with Downtown Loop via Hall would:

- Avoid the sharp curve included with the non-loop option that could be challenging for LRT and could create noise impacts;
- Result in a longer, slower alignment.

Not recommended because:

D. Downtown Loop via Ash Street instead of Loop via Hall would:

- Result in more property impacts to downtown Tigard compared to alternative loop.

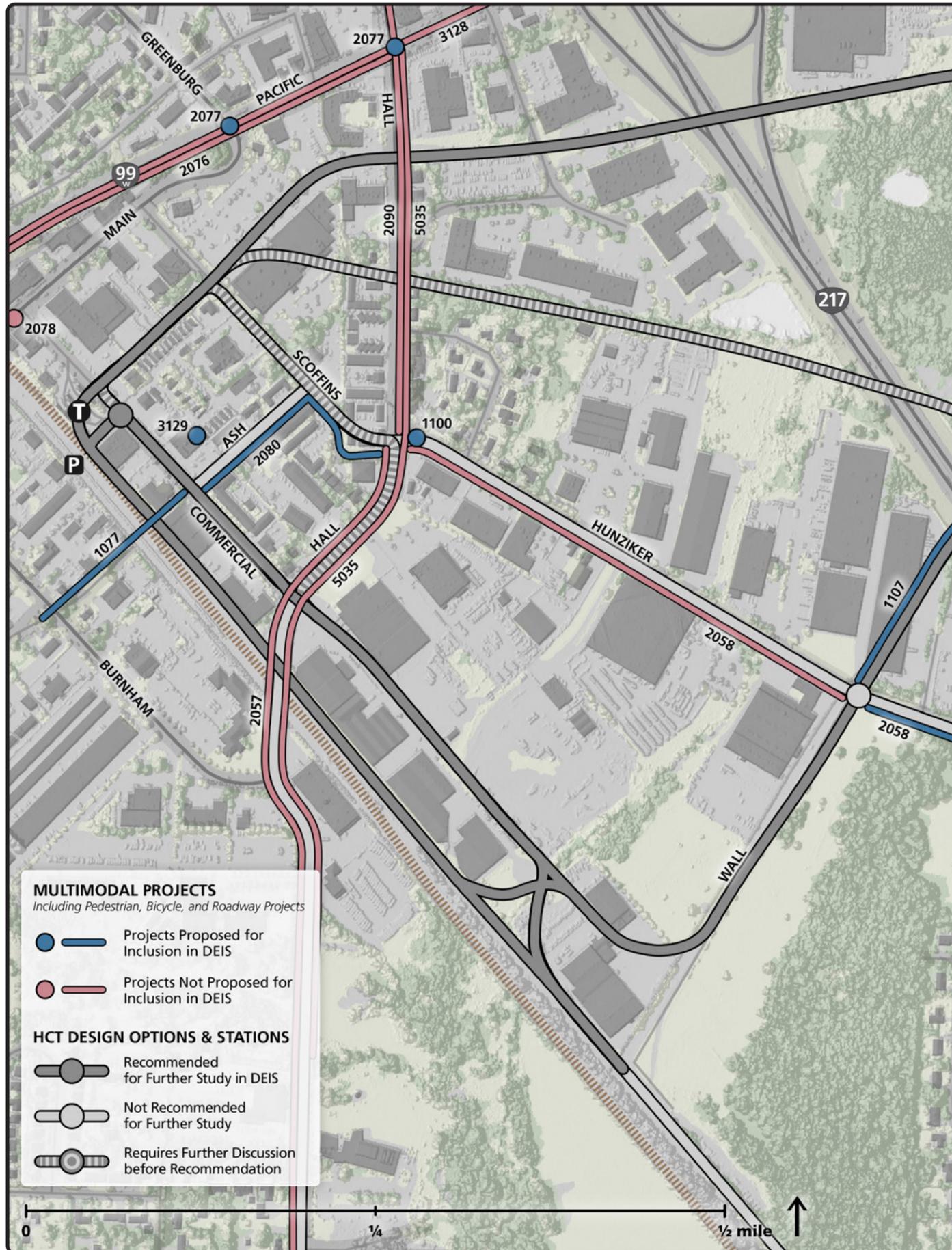
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
6. Downtown Tigard								
B	Commercial St with Downtown Loop via Hall	●	●	●	●	●	●	●
C	Commercial St to Tigard TC (no downtown loop)	●	●	●	●	●	●	●
D	Downtown Loop via Ash St instead of Loop via Hall	●	●	●	●	●	●	●

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts / DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS (Blue) / Not Proposed for Further Study in DEIS (Red) / Requires Further Discussion before Recommendation (Yellow)

6. Downtown Tigard: Multimodal Projects



Multimodal Projects

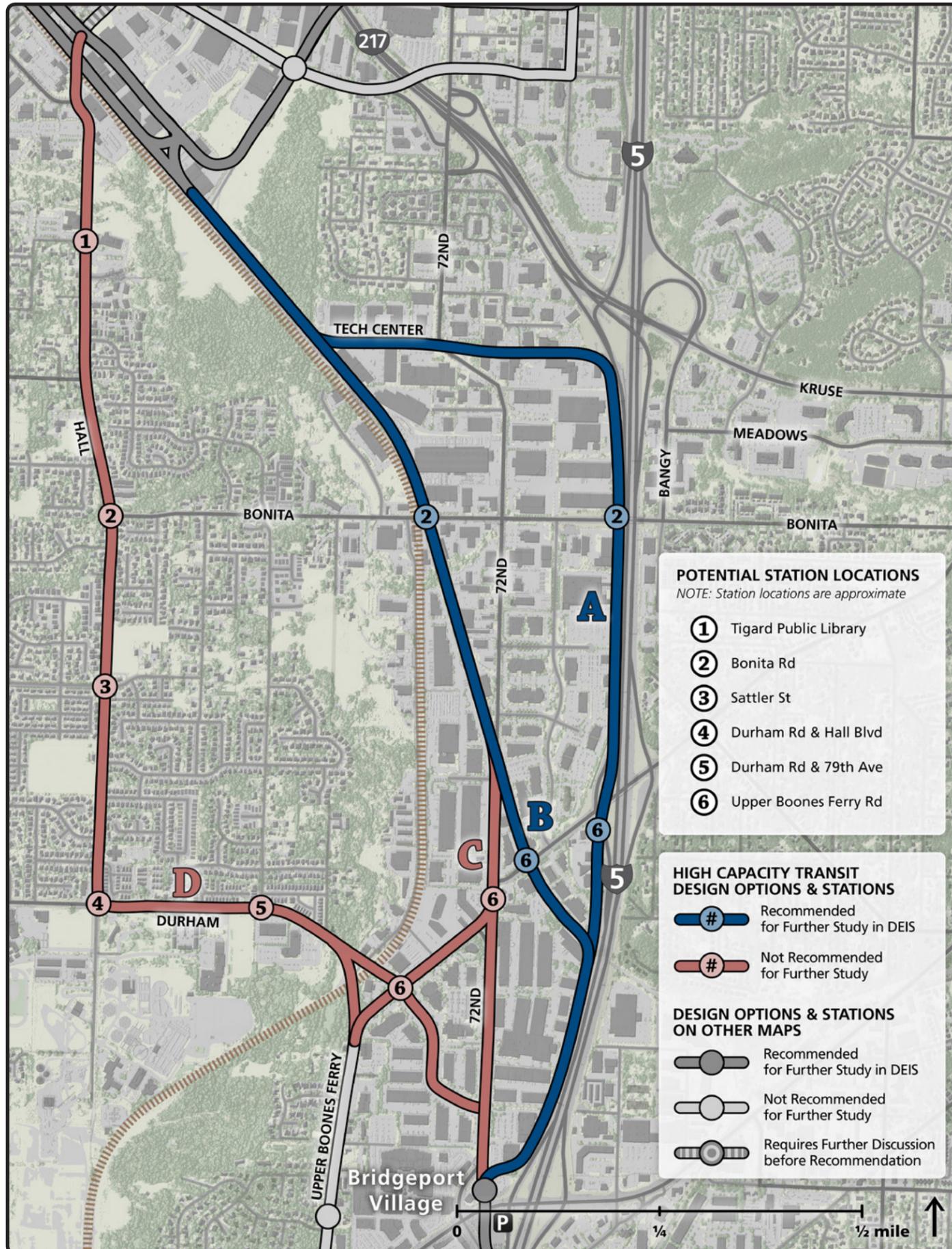
Multimodal projects recommended to advance include a new street connection and pedestrian and bicycle projects intended to improve access to potential station areas in downtown Tigard. Several projects were already covered by other projects, or were not along to the recommended transit alignment options, and were not recommended.

###	Project Title	Cost	Draft DEIS Recommendation
City/Ownership	Project Description	Primary Mode	
1077 Tigard	Ash Avenue railroad crossing (new roadway) Extend Ash Avenue across the railroad tracks from Burnham to Commercial Street	\$ Auto/Freight	All options: Include. Requires closure of another crossing by city.
1100 Tigard Wash. Co.	Hall/Hunziker/Scoffins Intersection Realignment Realign offset intersection to cross intersection to alleviate congestion and safety issues	\$ Auto/Freight	Do not include
1107 Tigard Wash. Co.	Hwy. 217 Over-crossing - Beveland/Hampton Connection Build new connection between Hunziker Road and 72nd Avenue at Hampton or Beveland, requires over-crossing over Hwy 217, revises existing intersection.	\$\$\$\$ Auto/Freight	With Beveland or Hampton alignment: Include
2057 Tigard	Hall Boulevard sidewalks: Hunziker to city limits Complete gaps in sidewalk on alternating sides of street from Hunziker Street to the South City Limits	\$ Pedestrian	Do not include
2058 Tigard	Hunziker Street Sidewalks: 72nd to Hall Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	\$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
2066 Tigard ODOT	Tigard Town Center (Downtown) Pedestrian Improvements Improve sidewalks, lighting, crossings, bus shelters and benches throughout the downtown including: Highway 99W, Hall Blvd, Main Street, Hunziker, Walnut and neighborhood streets.	\$ Pedestrian	Do not include. Vaguely defined; specific transit priorities addressed in other projects.
2076 Tigard ODOT	Tigard Transit Center 99W sidewalk infill. Build sidewalks that are at least 10 ft. wide along SW Pacific Hwy (99W), where there are none, and widen existing sidewalk corridors all along 99W, so there is landscaped buffer between pedestrians and the motor vehicles.	\$ Pedestrian	Do not include
2077 Tigard ODOT	Tigard Transit Center crossing improvements. Shorten crossing distances, make crosswalks more visible, and provide more time for pedestrians to cross at the intersections of 99W and SW Greenburg Rd., 99W & SW Hall Blvd., and 99W & SW Dartmouth St.	\$ Pedestrian	All options: Include crosswalk visibility and timing elements at Greenburg, Hall, Dartmouth, 72nd, and 68th.
2078 Tigard	Tigard Transit Center Park & Ride pedestrian path. Provide a designated pedestrian path through the transit center park and ride lot, connecting to SW Main St	¢ Pedestrian	Do not include. Feasibility unclear due to existing parking.
2079 Tigard	Tigard Transit Center pedestrian path Formalize the informal path running from Center Street to SW Commercial St. to SW Hall Blvd., by paving it, making it ADA accessible, providing lighting, and wayfinding signage.	¢ Pedestrian	All options: Include. Note: may be funded through STIP
2080 Tigard	Tigard Transit Center sidewalk infill Build sidewalks, where there are none, along SW Scoffins St. & SW Ash St. These streets are near the Tigard Transit Center and provide access to it. Ensure there is a landscaped buffer between pedestrians and motor vehicles.	¢ Pedestrian	All options: Include
2090 Tigard	Hall Blvd sidewalks: Locust to Hunziker Locust St to Hunziker St - pedestrian infill	\$ Pedestrian	Do not include
3128 Tigard ODOT	Pacific Hwy-99W Bike Lanes in Tigard Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan.	\$ Bicycle	Do not include
3129 Tigard	Tigard Transit Center Bicycle Hub Provide bicycle hub at Tigard Transit Center	¢ Bicycle	All options: Include as bike 'n ride
5035 Tigard, ODOT, Wash. Co.	Hall Boulevard Widening, Highway 99W to Fanno Creek Widen to 3 lanes, or for transit, plus on-street parking (or potential 5 lanes); build sidewalks and bike lanes; safety improvements	\$ Multimodal	Do not include

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

7. South Tigard



Design Options

Three of the options in this segment would operate parallel to a portion of the WES alignment between Tigard and Tualatin before reaching Bridgeport Village by differing routes. These options would serve more employment compared to the remaining option, which would connect to Bridgeport Village via Hall Boulevard and serve mainly households. WES alignment options are differentiated by right-of-way ownership and by varying impacts to industrial businesses.

Recommended for further study because:

- B. WES Alignment to Parallel I-5 via PNWR Freight Rail ROW would:
 - Avoid impacts to industrial business accesses on SW 72nd Avenue;
 - Avoid congested intersections along SW 72nd Avenue;
 - Require fewer property acquisitions compared to WES option utilizing Tech Center Drive, resulting in lower costs.
- A. WES Alignment to Parallel I-5 via Tech Center Drive would:
 - Avoid impacts to industrial business accesses on SW 72nd Avenue;
 - Avoid congested intersections along SW 72nd Avenue;
 - Avoid PNWR freight rail right of way, the use of which would require negotiations with rail owners;
 - Provide connectivity to areas east of I-5 at the SW Bonita Road and SW Carman Drive/SW Upper Boones Ferry Road crossings.

Not recommended because:

- C. WES Alignment and SW 72nd Ave would:
 - Impact industrial business accesses on SW 72nd Avenue;
 - Potentially impact traffic on SW 72nd Avenue.
- D. Hall Blvd to Durham Rd would:
 - Travel through predominantly single family residential areas with limited ridership and development potential;
 - Result in slower travel times compared to WES alignment options.

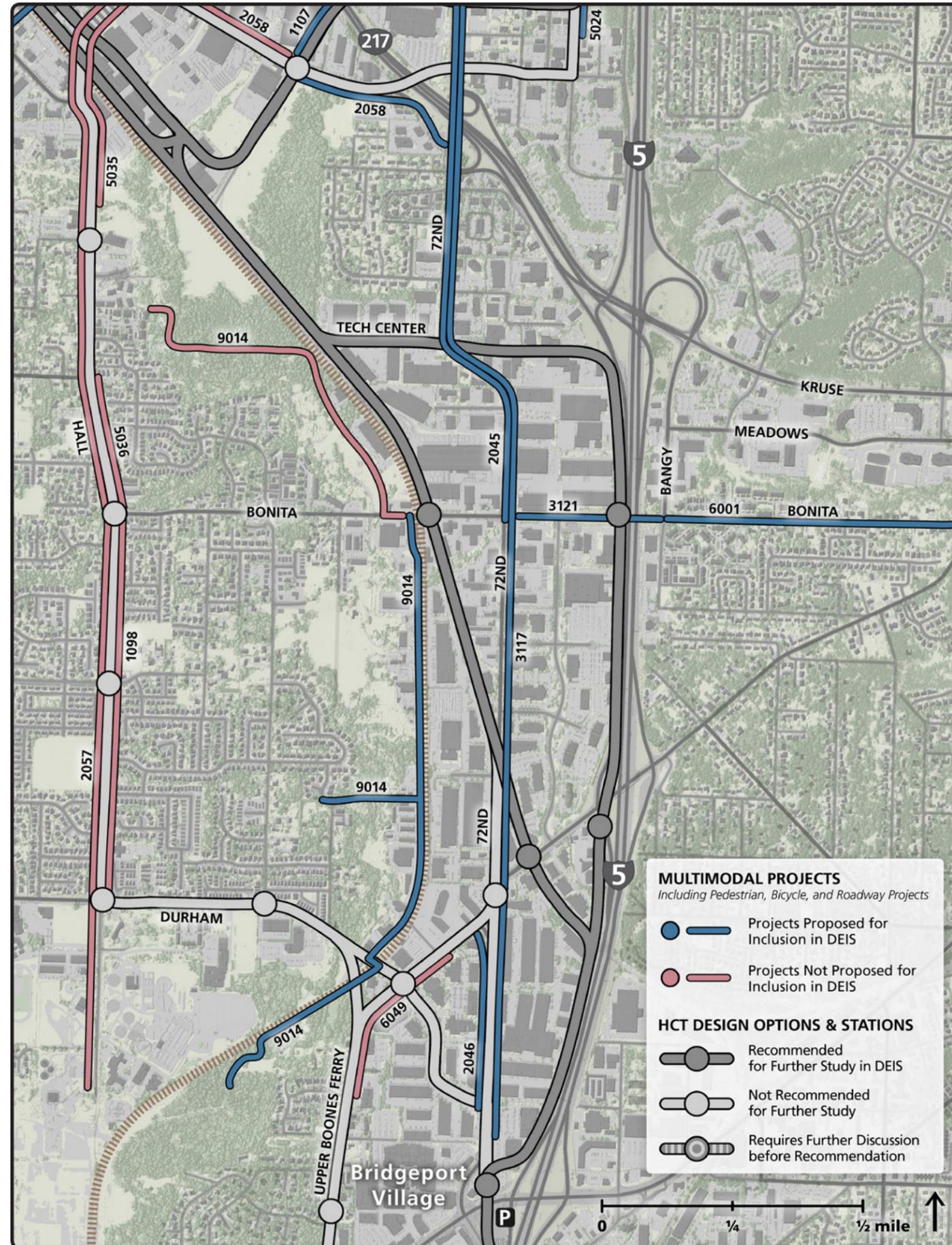
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
7. Tigard to Durham								
A	WES Alignment to Parallel I-5 via Tech Center Drive	●	●	●	●	●	●	●
B	WES Alignment to Parallel I-5 via PNWR Freight Rail ROW	●	●	●	●	●	●	●
C	WES Alignment and 72nd Ave	●	●	●	●	●	●	●
D	Hall Blvd to Durham Rd	●	●	●	●	●	●	●

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Best ● ● ● ● ● Worst ○

Proposed for Further Study in DEIS (Blue) / Not Proposed for Further Study in DEIS (Red)

7. South Tigard: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas. Several projects were not along the recommended transit alignment options, and were not recommended.

###	Project Title	Cost	Draft DEIS Recommendation
City/Ownership	Project Description	Primary Mode	
1098 Tigard Wash. Co.	Hall Boulevard Widening, Bonita Road to Durham Widen to 3 lanes or for transit; build sidewalks and bike lanes; safety improvements (construct 3 lanes with development, preserve ROW for 5 lanes)	\$ Auto/Freight	Do not include
2045 Tigard	72nd Avenue sidewalks: 99W to Bonita Complete gaps in sidewalk on both sides of street from Highway 99W to Bonita Road	\$ Pedestrian	With Triangle North station: Include one side from 99W-Dartmouth (25%) With Triangle South station: Include one side Dartmouth-Hunziker (25%) With 72nd/Tech Center Drive station: Include west side Tech Center Dr-south of Landmark Ln (20%) With WES/Bonita station: Include east side Bonita-Landmark Ln (10%)
2057 Tigard	Hall Boulevard sidewalks: Hunziker to city limits Complete gaps in sidewalk on alternating sides of street from Hunziker Street to the South City Limits	\$ Pedestrian	Do not include
2058 Tigard	Hunziker Street Sidewalks: 72nd to Hall Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	\$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
3117 Tigard Tualatin	72nd Avenue bikeway: 99W to city limits Install bike facilities on both sides of the street from Highway 99W to South City Limits	\$ Bicycle	All options: Include if done through re-stripping (conversion from 3-lane to 2-lane with bike lanes)
3121 Tigard Lake Oswego	Bonita Road bike lanes: 72nd to Bangy Install bike lanes from 72nd Avenue to Bangy Road	€ Bicycle	With WES/Bonita station: Include as re-stripping only
5024 Tigard	68th Avenue (widen to 3 lanes) Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	\$\$\$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%) With 68th alignment: Include
5035 Tigard Wash.Co. ODOT	Hall Boulevard Widening, Highway 99W to Fanno Creek Widen to 3 lanes, or for transit, plus on-street parking (or potential 5 lanes); build sidewalks and bike lanes; safety improvements	\$ Multimodal	Do not include
5036 Tigard Wash. Co.	Hall Boulevard Widening, McDonald Street to Fanno Creek including creek bridge Widen to 3 lanes or for transit; preserve ROW for 5 lanes; build sidewalks and bike lanes; safety improvements	\$\$\$ Multimodal	Do not include
6001 Lake Oswego	Bonita Rd. sidewalks and bike lanes - Carman Dr. to Bangy Rd. Sidewalks and bike lanes; supplement to Tigard project #3121 which continues to 72nd	€ Bike/Ped	With WES/Bonita station: Include bike lanes only as minor widening
6049 Durham	Boones Ferry Sidewalks Improve sidewalks and bicycle lane on Boones Ferry Road from north of Durham Road to Afton Lane	€ Bike/Ped	Do not include
9014 Tigard	Fanno Creek Trail - Tualatin River to Tigard St Complete gaps along the Fanno Creek multiuse path from the Tualatin River to Tigard Library and from Pacific Hwy-99W to Tigard Street. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$ Multi-Use Trail	With WES/Bonita station: Include from Bonita to Ashford (20%) With Durham/79th station: Include Bonita to Durham Park (40%) With Bridgeport West station: Include Bonita to Ashford (20%)

Include in DEIS Include Partially Do Not Include

Cost: € = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

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8. Bridgeport Village

8. Bridgeport Village: Design Options for BRT and LRT



Design Options

There are two options under consideration for this segment. Upper Boones Ferry Road, to the west of Bridgeport Village, could connect to the Hall Boulevard or SW 72nd Avenue options to the north. Lower Boones Ferry Road, to the east of Bridgeport Village, could connect to SW 72nd options or options parallel to I-5 to the north.

Recommended for further study because:

B. Lower Boones Ferry Road would:

- Serve the main entrance of Bridgeport Village;
- Provide direct access to Tualatin Park & Ride lot;
- Include a bridge crossing over the SW Lower Boones Ferry/SW Bridgeport Road intersection;
- Be accessible to new housing developments south of Bridgeport Village.

Not recommended because:

A. Upper Boones Ferry Road would:

- Not serve the main entrance of Bridgeport Village;
- Require a long walk to the Tualatin Park & Ride lot;
- Remove recent streetscaping installed by the City of Durham;
- Impact tree groves purchased by Durham through a bond measure;
- Be incompatible with the recommended parallel to I-5 options to the north.

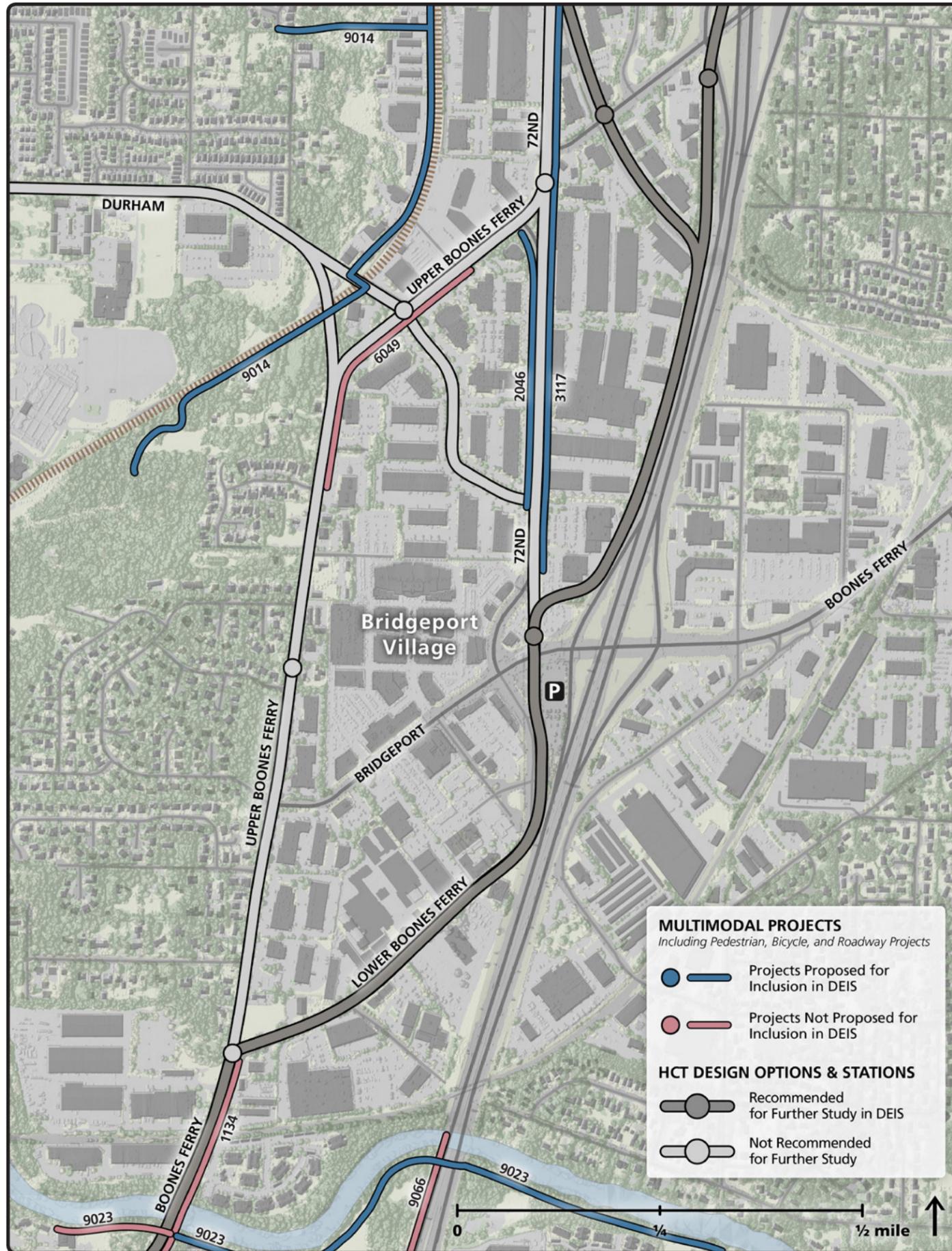
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
8. Bridgeport Village								
A	Upper Boones Ferry (from Durham Rd or 72nd)	●	●	●	●	●	●	●
B	Lower Boones Ferry (from Durham Rd, 72nd or parallel to I-5)	●	●	●	●	●	●	●

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ● ● ● ● Worst

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

8. Bridgeport Village: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects along 72nd Avenue intended to improve access to potential station areas. One project was not along the recommended transit alignment options, and was not recommended.

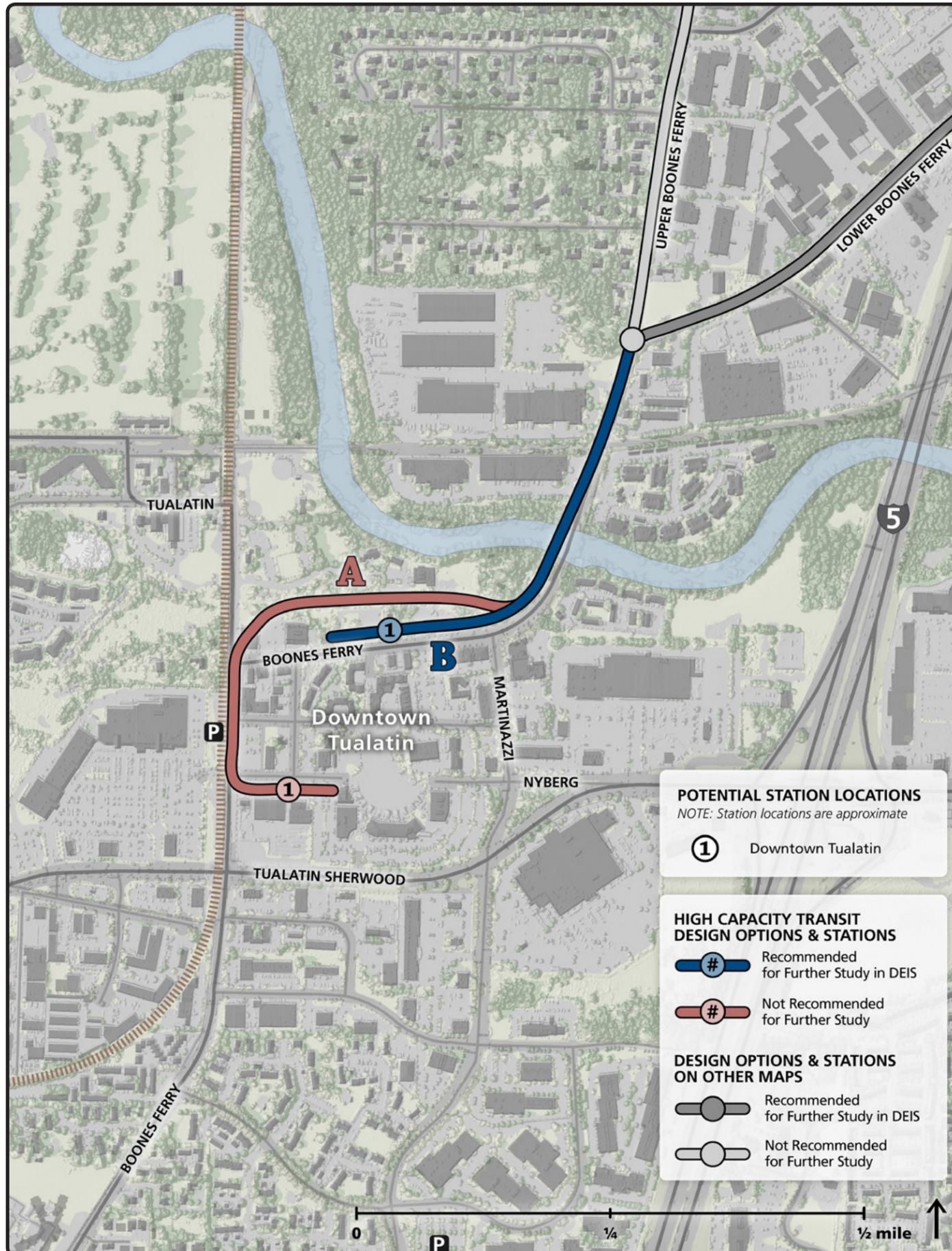
###	Project Title	Cost	Primary Mode	Draft DEIS Recommendation
1134 Tualatin Washington Co.	Boones Ferry Road (reconstruct/widen from Martinazzi to Lower Boones Ferry) Reconstruction/widen to 5 lanes or for transit from Martinazzi to Lower Boones Ferry Road, including bridge.	\$\$\$	Auto/ Freight	Do not include
2046 Tigard	72nd Avenue sidewalks: Upper Boones Ferry to Durham Install sidewalk on both sides of street from Upper Boones Ferry Road to Durham Road	\$	Pedestrian	With Bridgeport Village front-door station: Include With 72nd alignment: Include
3117 Tigard Tualatin	72nd Avenue bikeway: 99W to city limits Install bike facilities on both sides of the street from Highway 99W to South City Limits	\$	Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
6049 Durham	Boones Ferry Sidewalks Improve sidewalks and bicycle lane on Boones Ferry Road from north of Durham Road to Afton Lane	¢	Bike/Ped	Do not include
9014 Tigard	Fanno Creek Trail - Tualatin River to Tigard St Complete gaps along the Fanno Creek multiuse path from the Tualatin River to Tigard Library and from Pacific Hwy-99W to Tigard Street. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$	Multi-Use Trail	With WES/Bonita station: Include from Bonita to Ashford (20%) With Durham/79th station: Include Bonita to Durham Park (40%) With Bridgeport West station: Include Bonita to Ashford (20%)
9023 Tigard Tualatin	Tualatin River Pathway Develop a continuous multi-use pathway along the Tualatin River from Boones Ferry Road under I-5 to the Tualatin River Greenway and Browns Ferry Park. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$\$	Multi-Use Trail	With Tualatin TC Station or UBF/LBF Station: Include from Boones Ferry Road east to existing trail (80%)
9066 Tualatin ODOT	North/South I-5 Parallel Path in Tualatin Ped/bike pathway	\$\$	Multi-Use Trail	Do not include

Include in DEIS Include Partially Do Not Include

Cost: ¢ = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

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9. Tualatin



Design Options

There are two options under consideration in this segment. Both would include a new crossing parallel to the Boones Ferry Road bridge over freight rail tracks and the Tualatin River, and both would travel north of Boones Ferry Road in downtown Tualatin. The second option would continue south into downtown to better connect with the WES station; however, a station directly adjacent to the WES platform would not be possible without widening Boones Ferry Road and impacting properties.

Recommended for further study because:

B. Parallel to Boones Ferry Road (north of downtown) would:

- Provide walk access to downtown Tualatin and to the WES station;
- Result in fewer property impacts and traffic impacts compared to the alternative option.

Not recommended because:

A. WES Connection via Boones Ferry Road near Nyberg Road would:

- Result in more impacts to commercial properties in downtown;
- Likely require elimination of left turn pockets or other lanes on SW Boones Ferry Road at SW Nyberg Road.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
9. Tualatin								
A	WES Connection via Boones Ferry near Nyberg Rd							
B	Parallel to Boones Ferry Rd (north side of downtown)							

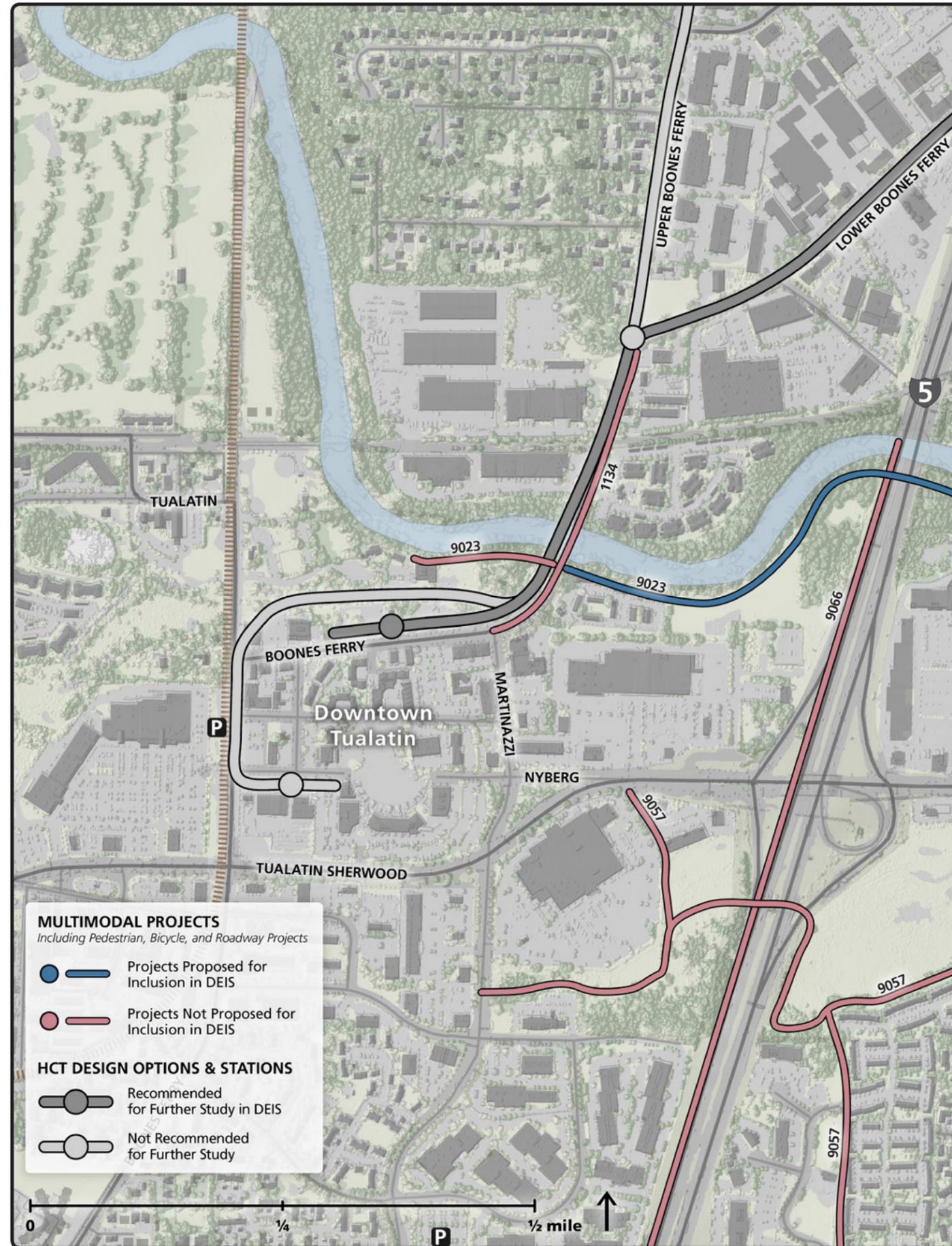
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts

DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best Worst

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

9. Tualatin: Multimodal Projects



Multimodal Projects

One multimodal project was recommended to advance – a trail connection between the potential station area and employment and residential areas to the east. Several projects did not provide direct access to the potential station areas, and were not recommended.

###	Project Title	Cost	Draft DEIS Recommendation
City/Ownership	Project Description	Primary Mode	
1134 Tualatin Washington Co.	Boones Ferry Road (reconstruct/widen from Martinazzi to Lower Boones Ferry) Reconstruction/widen to 5 lanes or for transit from Martinazzi to Lower Boones Ferry Road, including bridge.	\$\$\$ Auto/ Freight	Do not include
9023 Tigard Tualatin	Tualatin River Pathway Develop a continuous multi-use pathway along the Tualatin River from Boones Ferry Road under I-5 to the Tualatin River Greenway and Browns Ferry Park. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	\$\$ Multi-Use Trail	With Tualatin TC Station or UBF/LBF Station: Include from Boones Ferry Road east to existing trail (80%)
9057 Tualatin	Nyberg Creek Greenway Connecting east and west of I-5 then north and south to Hwy 99 to I-5 bikeway (south) and Tualatin River Greenway (north)	\$ Multi-Use Trail	Do not include
9066 Tualatin ODOT	North/South I-5 Parallel Path in Tualatin Ped/bike pathway	\$\$ Multi-Use Trail	Do not include

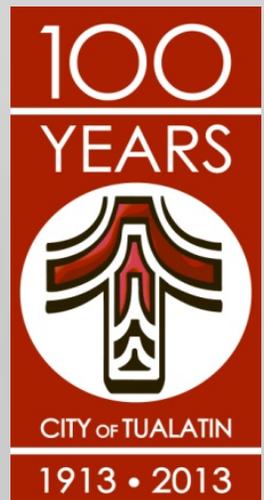
Include in DEIS Include Partially Do Not Include

Cost: € = up to \$500,000 \$ = up to \$5M \$\$ = up to \$10M \$\$\$ = up to \$20 M \$\$\$\$ = more than \$20M

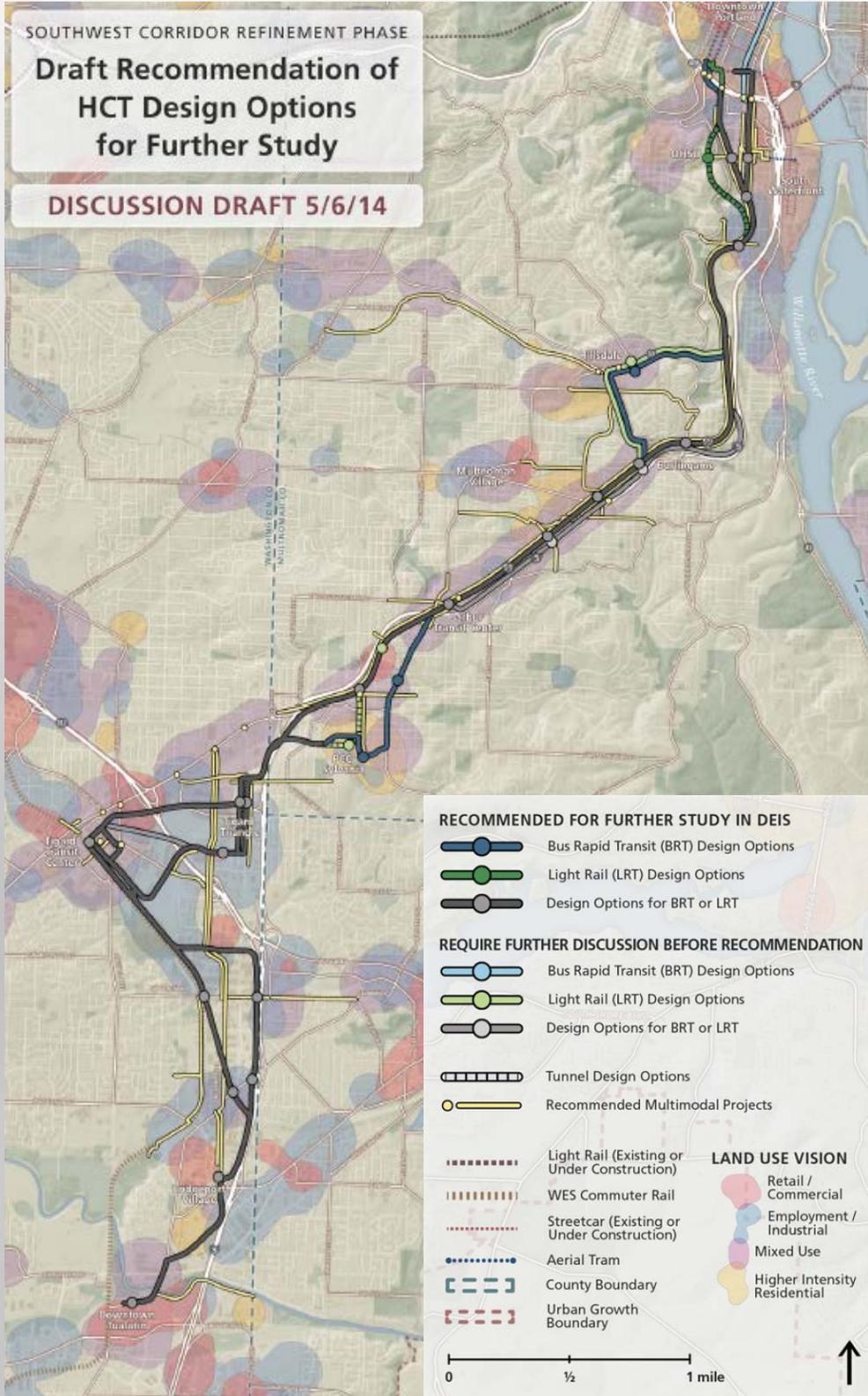


Southwest Corridor Transit Update

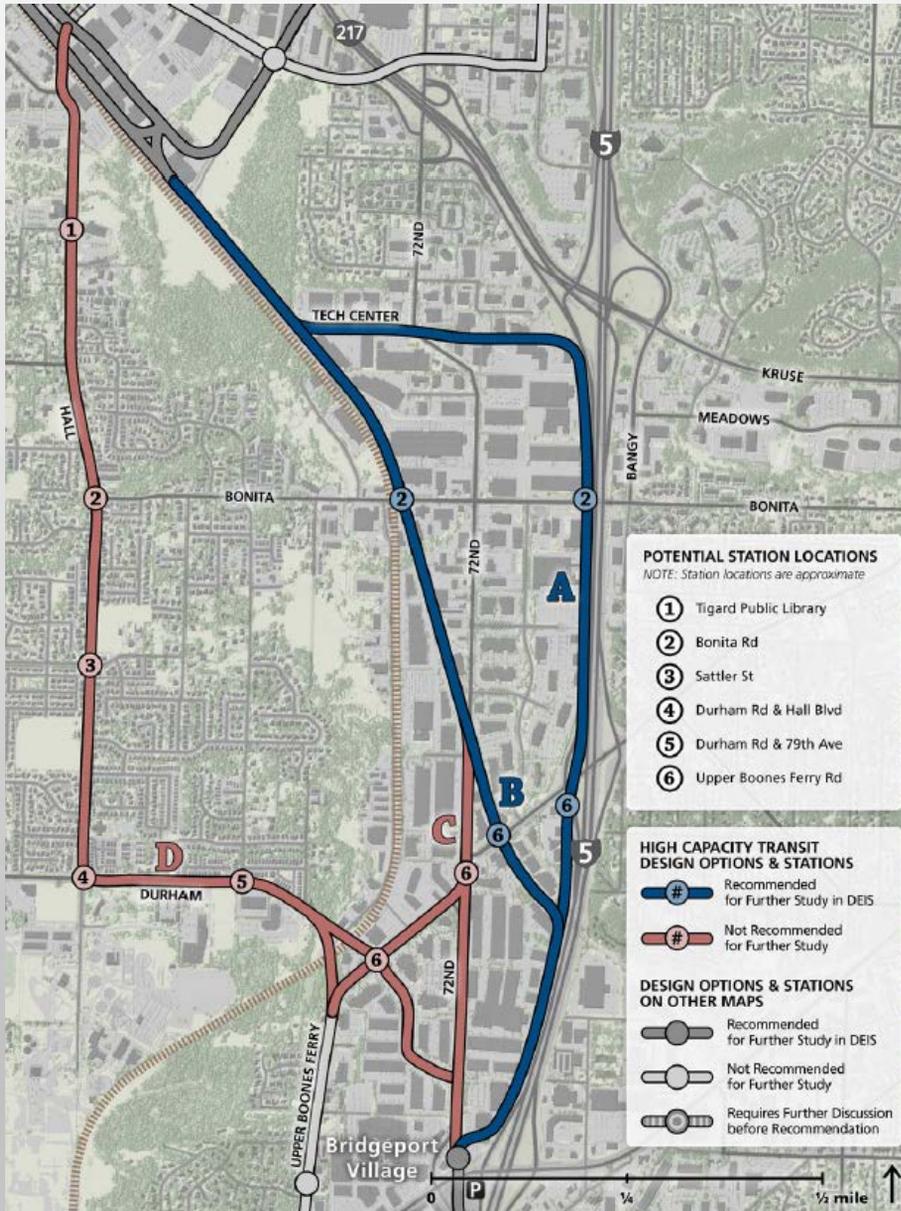
Tualatin City Council
Work Session
4/12/2014



Draft Recommendation



South Tigard



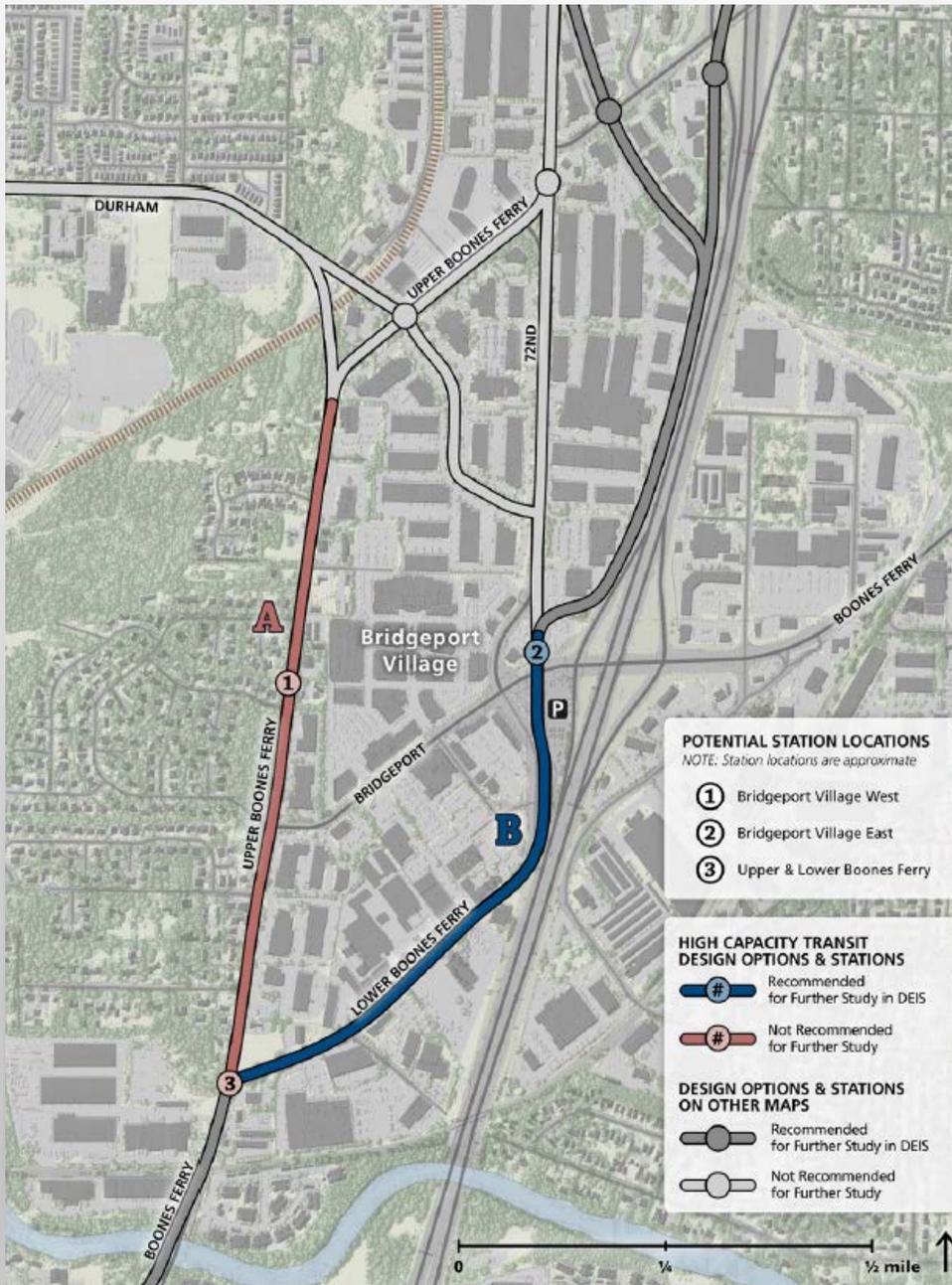
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
7. Tigard to Durham								
A	WES Alignment to Parallel I-5 via Tech Center Drive	☺	☺	☺	☺	☹	☺	☺
B	WES Alignment to Parallel I-5 via PNWR Freight Rail ROW	☹	☺	☺	☺	☹	☹	☹
C	WES Alignment and 72nd Ave	☺	☺	☹	☺	☹	☹	☺
D	Hall Blvd to Durham Rd	☹	☺	○	☺	☺	☺	☺

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Best ● ● ● ● ● Worst ○

 Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

Bridgeport Village / Durham



POTENTIAL STATION LOCATIONS
NOTE: Station locations are approximate

- ① Bridgeport Village West
- ② Bridgeport Village East
- ③ Upper & Lower Boones Ferry

HIGH CAPACITY TRANSIT DESIGN OPTIONS & STATIONS

- # Recommended for Further Study in DEIS
- # Not Recommended for Further Study

DESIGN OPTIONS & STATIONS ON OTHER MAPS

- # Recommended for Further Study in DEIS
- # Not Recommended for Further Study

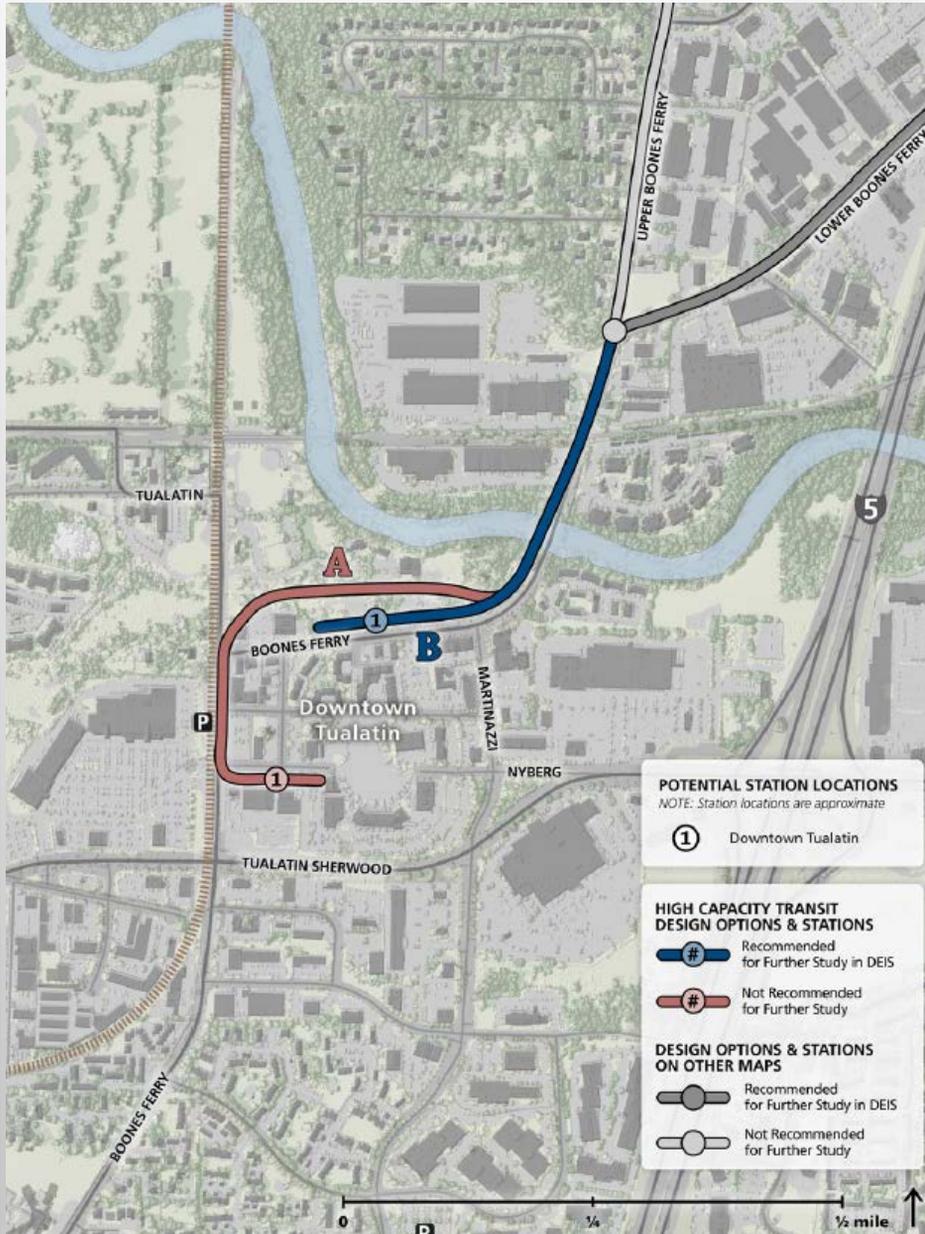
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
8. Bridgeport Village								
A	Upper Boones Ferry (from Durham Rd or 72nd)	●	◐	◑	◒	◓	◔	◕
B	Lower Boones Ferry (from Durham Rd, 72nd or parallel to I-5)	◐	◑	◒	◓	◔	◕	◖

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts / DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◐ ◑ ◒ ◓ ◔ ◕ ◖ Worst

 Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

Downtown Tualatin



ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
9. Tualatin								
A	WES Connection via Boones Ferry near Nyberg Rd	☾	☾	☾	○	☾	☾	○
B	Parallel to Boones Ferry Rd (north side of downtown)	☾	●	☾	☾	☾	☾	☾

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
 DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ☾ ☾ ☾ ○ Worst

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

Next Steps





MEMORANDUM

CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos

FROM: Kaaren Hofmann, Engineering Manager
Alice Cannon, Assistant City Manager

DATE: 05/12/2014

SUBJECT: Update the City Council on current water issues

ISSUE BEFORE THE COUNCIL:

To provide background information to the City Council on current water issues.

EXECUTIVE SUMMARY:

BACKGROUND

In 2013, the City adopted an updated Water Master Plan. The plan indicated that the water demands will exceed Tualatin's supply in 2023. Our existing supply capacity is 10.8 million gallons per day (mgd) and our build-out water demands are projected to be 14.2 mgd. Staff indicated that we would monitor demands and return to the Council with updated demand projections in 2016.

Besides the water we buy from Portland, the City's assets with regards to water include:

- 18% share in the Washington County Supply Line, this equals 10.8 mgd
- Water rights on the Willamette River due to our participation in the Willamette River Water Coalition (WRWC)

CURRENT EVENTS

The City currently buys our water from the City of Portland as a wholesale customer. There are currently 15 wholesale customers of Portland water. This contract is effective until July 1, 2026. The City of Tigard, a wholesale customer, has entered into a partnership with the City of Lake Oswego to provide Clackamas River Water to their customers. Therefore, their contract with Portland will expire in 2016. Due to the way the City of Portland distributes costs to the wholesale customers, Tigard's departure will mean that Tualatin's rates are expected to increase 23% over the next 5 years.

Currently, the cities of Wilsonville and Sherwood provide Willamette River water to their constituents. Tualatin Valley Water District (TVWD) and the City of Hillsboro plan to be drawing

water from the Willamette Water Treatment Plant by 2026. The City signed a "Joinder Agreement" to participate in the preliminary design study for a not to exceed investment of \$100,000. This study will help inform future decisions about our water supply options. The study includes:

- a) Preliminary design of the supply system from the Willamette River Water Treatment Plant (WRWTP) to the supply points for the various water distribution systems;
- b) Design guidelines for the supply system;
- c) Hydraulics;
- d) Criteria for the terminal reservoir;
- e) Permitting requirements; and
- f) Schedule and Cost Estimates.

Due to the decisions of TVWD and Hillsboro and the far-reaching policy implications of this move to obtain Willamette River water, a group of interested jurisdictions began discussion about planning and governance; management of water rights; management of plant operations and maintenance responsibilities of the Willamette Treatment Plant. The goal is to have a jurisdictional framework that would effectively replace the Willamette River Water Coalition (WRWC) by the end of this calendar year. The interested jurisdictions include:

1. Tualatin (WRWC Member)
2. Sherwood (WRWC Member)
3. Tigard (WRWC Member)
4. Beaverton
5. Wilsonville
6. Hillsboro
7. Tualatin Valley Water District (WRWC Member)

Jerry Postema, Sean Brady, and Kaaren Hofmann are participating on behalf of the City. As the process continues, Staff will bring information, updates, policy questions and ultimately the proposals back to the City Council for discussion and approval.

LATEST INFORMATION FROM THE PORTLAND WATER BUREAU

There is a citizen initiated measure on the May 20 ballot in the City of Portland. This initiative would create a Portland Public Water District, combining services of the Bureau of Environmental Services and the Water Bureau. It would be governed by seven board members elected from throughout the district.

The Water Bureau (PWB) is in the process of completing construction on the Powell Butte II reservoir. Five years ago, the PWB indicated that this asset serves their retail customers. Recently, they started a discussion of allocating this cost to the wholesale customers. Due to the way costs are distributed, PWB's proposal shows a 34% rate increase to the City of Tualatin on July 1, 2015. The wholesale customers are discussing our concerns with this shift in policy and its implications about the proposed allocation with the PWB. These concerns are resulting in the need to complete a cost allocation study. We will keep the Council informed as more information becomes available.

OUTSTANDING ISSUES

There are several issues for which the City still needs to obtain information. These include:

- rate impacts to Tualatin as TVWD and others move off of the Bull Run System;

- possible changes in Portland water governance and organizational structure if a citizen initiative is approved by Portland voters on May 20.

NEXT STEPS

The next steps for discussing water system issues for the City include:

1. Monitor the May 20 vote in Portland on the Public Water Board;
2. Participate in the cost allocation study for the Powell Butte II reservoir;
3. Continue to participate in the Willamette Water Supply Preliminary Design Project;
4. Continue to participate with the Willamette Governance discussion;
5. Keep the Council updated on pertinent issues at key decision points; and
6. Continue to monitor water demands and projects in Tualatin.

Attachments: A. Powerpoint

The background is a light blue gradient with various water-themed illustrations. At the top, there is a wavy line representing water. Below it, a faucet is shown with a single drop of water falling. To the left, there is a stylized sun with rays. In the center, there are several water splashes and droplets. At the bottom, there are more wavy lines and a large, stylized water splash.

Water Update

City Council Work Session

May 12, 2014



Tualatin's Water Needs

- 2013 Master Plan
 - Projected for water demand to exceed supply (10.8 mgd) in 2023
 - Build out water demands are projected to be 14.2 mgd
 - City staff to monitor demands and return to Council in 3 years (2016) with updated demand projections and information

Tualatin Assets

- Washington County Supply Line
 - Shared Use Supply Line
 - City has 18% Share
 - this provides us with access to 10.8 mgd
 - Other Entities with Share
 - Tualatin Valley Water District = 42.3 mgd
 - Portland Water Bureau = 6.8 mgd
 - Raleigh Water District = 0.9 mgd
- Willamette River Water Coalition (WRWC)
 - Consists of Tualatin, Tigard, Sherwood, and TVWD
 - WRWC has Water Rights on the Willamette River
 - 130 mgd



Where are we now?

- Portland Contract
 - Bull Run water through 2026
- City of Tigard is going off the Bull Run System July 1, 2016
- Due to Tigard's departure, Tualatin rates expected to increase 23% over the next 5 years





Where are we now?

- Tualatin Valley Water District & Hillsboro plan to be drawing water from the Willamette Water Treatment Plant in Wilsonville by 2026
 - Tualatin's Involvement
 - Participating in the preliminary design work currently underway
 - Treatment Plant
 - Pipeline Alignments
 - Terminal Storage Location
 - Acting as a technical resource on the construction of a 72" pipe in SW 124th Avenue south Tualatin-Sherwood Road which should begin in 2015

Where are we now?

- A group of interested jurisdictions began discussions about Willamette River water
- The interested jurisdictions are:
 1. Tualatin
 2. Sherwood
 3. Tigard
 4. Beaverton
 5. Wilsonville
 6. Hillsboro
 7. Tualatin Valley Water District



Latest from Portland Water Bureau

- The Water Bureau is in the process of completing construction on the Powell Butte II reservoir.
- The PWB previously indicated that this asset serves only their retail. So the cost was to be recovered by the Portland ratepayers.
- Portland recently discussed the possibility of allocating this cost also now to the wholesale customers also.
 - PWB proposal would likely raise Tualatin Rates
 - 34% rate increase on July 1, 2015
 - 20% increase over (14-15 rates) on July 1, 2016.
 - Two-year rate increase could mean an increase of \$1.1 million dollars over the next two years.



Outstanding Issues

- Rate Impacts to Tualatin as TVWD and others move off of the Bull Run System
- Possible changes in the Portland water governance and organizational structure. This will be decided by Portland voters on May 20.
- Lack of Control over Customer Issues
 - Flouride
 - Boil Water Notices



The background features a light blue gradient with various water-themed illustrations. At the top, there is a wavy line representing water. Below it, a water tap is shown with water dripping from its spout. Several large, stylized water splashes of varying sizes are scattered across the page. The overall aesthetic is clean and aquatic.

Questions/Discussion



MEMORANDUM

CITY OF TUALATIN

TO: Honorable Mayor and Members of the City Council

THROUGH: Sherilyn Lombos

FROM: Don Hudson, Finance Director

DATE: 05/12/2014

SUBJECT: Advanced Refunding of Outstanding Water Revenue Bonds

DISCUSSION:

During 2005, the City sold revenue bonds in the amount of \$7,305,000 for construction of a five million gallon water reservoir and the retrofitting of four existing water reservoirs and three water pump stations to meet current seismic loading standards. Interest rates for this bond range from 4.00% to 4.5% and mature in December 2025. There is a call feature allowing the City to retire the remaining outstanding bonds in December 2015. We are now close enough to the call date to advance refund these bonds. With the current state of the bond market, we have the ability to reduce the average coupon rate on the outstanding bonds from 4.34% to 2.28%, and reduce the annual debt service payment by approximately \$25,000 to \$30,000 annually. Staff will provide Council with information about the proposed refunding this evening and return at the next meeting with an authorizing resolution to move forward with the refunding process.

Attachments: